Registered at the G.P.O., Sydney, for Transmission by Post as a Newspaper. Published Weekly.

THE MEDICAL JOURNAL OF AUSTRALIA

(With which "The Australasian Medical Gazette," and "The Australian Medical Journal" are incorporated.)

The Journal of the Australian Branches of the British Medical Association.

VOL. II.—7TH YEAR—No. 23. SYDNEY: SATURDAY, DECEMBER 4, 1920. PRICE 6D.

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TREATMENT OF A DENTAL ABSCESS.[1]

By A. R. Menzies, D.D.S. (Penn.), L.D.S., R.C.S. (Edin.), L.D.Q. (Qld.),
Brisbane.

I am here at the invitation of your Society, extended to the Odontological Society, for one of its members to read a paper on some subject of mutual interest.

It gave great pleasure to the President and members of our Society to receive the invitation, which was immediately accepted.

At the President's request I undertook to write the paper, the subject matter of which is the treatment of a dental abscess.

This subject has been repeatedly threshed out in every dental society for the past few years and it is only presented to you to-night because it was one of the subjects suggested to us in your letter of invitation. Hence no apology is necessary. I trust that the discussion which I hope will ensue, will be instructive to us all.

I have purposely left the paper with a great deal to be said and would be glad if other dentists present would add any particulars of special interest.

In presenting this paper to you I am taking up the attitude that a great deal of the subject matter is common knowledge to both the medical and dental professions, therefore I have purposely omitted a great deal of the fundamentals, such as detailed descriptions of anatomy, pathology and the allied subjects, as it would only be an infliction and tend to weary you. Consequently, if my remarks appear to lack a great deal of these details, I would have you remember that I consider them as understood.

Abscesses originating on teeth are invariably considered by the medical fraternity as a purely dental matter and as such are quite rightly referred to the dentist for attention. It is only within the last few years that the medical profession has attached any importance to this pathological disturbance, following on the researches and writing of some of the most prominent members. When a patient presents himself for medical examination, the doctor usually inspects the teeth and, provided he is unable to diagnose the particular ailment and he thinks the teeth may have something to do with it, he refers the patient to the dentist to see if the latter can discover anything wrong. Numerous eminent medical scientists, as Hunter, Rosenow, Mayo, etc., have been for years writing and lecturing on the dangers of focal infection and calling special attention to the oft overlooked one of dental origin, hence it is not surprising that your Society is anxious to have a discussion on the subject.

Dentistry in the past has been a profession in which manipulative dexterity has taken precedence over a knowledge of pathology. This accounts for the too frequently observed and sometimes brilliantly constructed pieces of restoration, covering and very frequently causing a state of pathological iniquity unparalleled in the realms of surgery. But it is only just to the dental profession to state that its members are now just as fully alive to the mistakes of the past as the doctors are and are anxious to convince the medical profession that dentistry of the future will be for the betterment of humanity, seeking out efficient methods based on strictly scientific knowledge.

Hunter, after years of research work, felt it his duty to step into the breach and call a halt to oral sepsis; the dentists have responded to his appeal.

It is not my intention to inflict a description of a dental abscess upon you, being well aware that that is a part of your professional knowledge, beyond the statement that I wish to draw your attention to the fact that there are at least two kinds of abscesses associated with the teeth. The more common variety is caused by infection from within the tooth and is known as an alveolar abscess. The second, known as a periodontal abscess, is situated upon the specialized periosteum of the tooth (the periodontal membrane). It is caused by irritation and infection carried to this bone membrane by the circulation in patients of gouty diathesis.

Alveolar Abscess—Ætiology.

The exciting cause of an alveolar abscess is always a bacterium and its toxins conveyed *viâ* the interior of the tooth itself to the alveolar process. The predisposing causes are many: infection of the pulp and consequent death from caries, exposure of the pulp to the salivary contents either by caries or accidentally or intentionally inflicted, insertion of metallic fillings in too close proximity to the pulp, death of the pulp from chemical or thermal agencies, operation within the pulp canal in an attempt to clean it without regard to strict surgical asepsis, remnants of a dead pulp left within the canal, insertion of imperfect root fillings, the forcing of dead or putrescent pulp material through the apex of the tooth, involvement of a root from an adjacent tooth already suffering from an abscess. It may have a fistula and discharge into the oral cavity usually at the point of least resistance, or it may be of a type known as a blind abscess. An abscess may be either acute or chronic.

When the abscess has a fistula it is, as a rule, easy to locate, but it is not always wise to condemn the tooth over which the fistula appears, as it sometimes happens that an abscess discharges its contents at a considerable distance from the affected tooth, sometimes over a healthy one. The abscess with a fistula is the least dangerous type, as it discharges its contents into the mouth and is either expectorated or swallowed. This, of course, is bad enough, as it may cause alimentary disorders of various kinds, but the point I wish to bring out is that on account of the fistula the presence of an abscess is made known to the patient and dentist, consequently it is more likely to receive proper attention. It is the blind abscess

[1] Read at a Combined Meeting of the Queensland Branch of the British Medical Association and the Odontological Society of Queensland on October 1, 1920.

or, as it might aptly be described, the abscess "of internal secretion," which is the most dangerous and undoubtedly the cause of most of the troubles which can with accuracy be laid at the door of dental focal infection.

The toxic material is absorbed into the circulation and its effects are observed in many diseases of organs and tissues, the number of which is steadily mounting up as research work progresses. That "abscessed" teeth can be the cause of disease in other parts of the body is now generally accepted, but the debatable point is: Do all "abscessed" teeth cause metastatic infection in some other part of the body? My contention is that all "abscessed" teeth may cause infection, some immediately and other as opportunity occurs.

An "abscessed" tooth may be dormant for years and suddenly break out with startling results. Sometimes we observe patients with numerous abscesses and a septic condition generally, who otherwise appear to enjoy good health. Again, we observe patients with only one tooth the seat of trouble, whose general health is completely disorganized thereby. The different theories advanced on the subject, immunity and susceptibility, are usually quoted to cover this. A great deal depends on the original health of the patient and the virulence of the organisms present. Certain organisms possess peculiar selective properties for certain tissues and organs of the body.

Sir William Hunter is very emphatic in his contention that "abscessed" teeth and oral sepsis generally do cause general infection resulting in a number of diseases, some of which previously had been of unknown origin. He says:—

> My clinical experience satisfies me that if oral sepsis (and naso-pharyngeal) could be successfully excluded, the other channels by which "medical sepsis" gains entrance to the body might be almost ignored. Sepsis as an important and prevalent cause of disease in medicine would almost cease to exist, instead of being as in my judgement it is at the present time, a more important and prevalent cause of disease in the domain of medicine than it is in that of surgery.

Later on in his article, referring to gold crowns, etc., placed over roots, he says:—

> I speak from experience. The worse cases of anæmia, gastritis, colitis of all kinds and degrees, of obscure fever of unknown origin, of purpura, of nervous disturbances of all kinds ranging from mental depression up to actual lesions of the cord, of chronic rheumatism, of kidney disease are those which owe their origin to, or are gravely complicated by, the oral sepsis produced in private patients by these gold traps of sepsis. Time and again I have traced the very onset of the whole trouble of which they complained to a period within a month or two of their insertion. The sepsis hereby produced is particularly severe and hurtful in its effects, for it is dammed up in the bone and in the periosteum and cannot be got rid of by any antiseptic measures which the patient or the doctor can carry out. Moreover, it is painless and its septic effects therefore go on steadily accumulating in intensity without drawing attention to their seat of origin.

Clinical Effects of Sepsis.

The chief feature of this particular oral sepsis is that the whole of it is swallowed or absorbed into the lymphatics and blood. Unlike the sepsis of open wounds on the outside of the body, none of it is got rid of by free discharge on the surface. The effects of it, therefore, fall in the first place upon the whole of the alimentary tract from the tonsils downwards. These effects include every degree and variety of tonsillitis and pharyngitis, of gastric trouble from functional dyspepsia up to gastritis and gastric ulcer and every degree and variety of enteritis and colitis and troubles of adjacent parts, *e.g.*, appendicitis. The effects fall in the second place upon the glands (adenitis), on the blood (septic anæmia, purpura, fever, septicæmia), on the joints (arthritis), on the kidneys (nephritis) and on the nervous system.

The most intense anæmia, blood poisoning, hectic fever and even ulcerative endocarditis may be produced by one deep-seated alveolar abscess. On the other hand, a man may have the foulest sepsis for years without apparently any ill effect, but he need not vaunt himself unduly upon this comparative immunity. Sooner or later his sepsis will find him out. For even if it does not itself produce definite disease of its own, it will certainly complicate any independent disease from which he may afterwards suffer and its effects, although unrecognized, may really constitute some of the most prominent features of his disease.

Both medical and dental journals have for some years been carrying on a crusade against oral sepsis. I know you are all well posted on this subject and I daresay you have all seen typical cases which undoubtedly have had their origin in oral sepsis and which have cleared up in an almost miraculous manner by simply extracting the offending teeth. If this success were repeated several times, it would tend to make you an advocate in the extraction of teeth whenever in doubt. The physician and surgeon are and have been for some time gradually adopting the attitude that retention of teeth is not absolutely necessary, especially when it comes to a matter in their opinion of deciding between the retention of bodily health and the retention of the teeth. They gradually and perhaps unconsciously come to value the teeth less and less.

The dentist, on the other hand, has been brought up and trained to save teeth in every possible way. The value of teeth to the patient has been drilled into him until he looks upon an extraction as a serious affair, due to ignorance on someone's part. In his attempt to save teeth, the dentist devised and carried out dental operations which occasionally resulted in various pathological conditions and their consequent sequelæ. It is really these two almost divergent views held respectively by medical and dental practitioners, which in reality have brought on the study of oral sepsis and which are tending to unite the two professions in a joint attempt to strike a middle course. The medical men have pointed out the evils of bad dentistry; as I previously stated they are gradually assuming the unimportance of retaining teeth of doubtful utility and the dentists are trying to perform dental operations which will retain teeth in healthy condition and thereby convince the medical man that it is not always necessary to extract when in doubt. It took the dental profession some time to realize that their conservative

dentistry of which they had been so proud, had in reality been causing havoc to the general health. It was only by hearing and reading repeatedly of cases which had been conclusively proven to be caused by misplaced dental efforts, that a general effort is being made to perform dental operations which, like Cæsar's wife, "are above suspicion."

You no doubt would like to hear something of the methods the dental profession is taking to cope with the evil. As in everything, "prevention is better than cure." Dentists are now aiming at preventive methods. A dentist hesitates now-a-days before he opens a healthy tooth to remove the pulp in order that the devitalized tooth may be used as an attachment or abutment for retaining a mechanical appliance. He realizes that a great many of these teeth, which before they had been interfered with were perfectly normal, may later become the sites of abscesses and that the chances of performing the operation successfully are really more or less doubtful. Therefore he gives the matter serious consideration before interfering with a healthy pulp. Every dentist will tell you that he does less and less intereference with healthy pulps as time goes on. Then, again, patients who make regular visits to their dentist and who value their teeth, rarely find it a necessity to have pulp removed from their teeth, either healthy or otherwise. This preventive dentistry, when it can be properly carried out, comprises regular cleaning of the surface of the teeth and filling of cavities as they appear before they assume a large size. The occasion for pulp removal and consequent abscess formation rarely occurs, so that if everyone could be treated in this manner, there would be no need to fill roots or to treat abscesses. We all know that it is asking a little too much of human nature to expect everyone to conform to this counsel of perfection and so, like the poor, decayed and abscessed teeth and oral sepsis will be always with us. It therefore becomes necessary to devise and carry out correct methods of treatment.

The primary object of dentistry is to maintain the teeth in a healthy and useful condition. Decay must be prevented as much as possible by prophylactic methods. When decay does occur, early removal of the decayed portion and correct filling is necessary, so that exposure of the pulp may be prevented. When a patient presents himself with an exposed pulp, it is necessary to carry out operative methods to remove the pulp and to fill the root in such a manner that infection beyond the actual pulp canal does not take place.

These are briefly the prophylactic or preventive methods adopted in dentistry to maintain the teeth in as healthy a condition as possible. When an abscess has developed, various methods are advocated for dealing with it; these will be taken up later. In this paper it is not necessary to deal with any of the preventive methods except that of preventing infection consequent on exposure of the pulp. A healthy pulp removed under strictly aseptic conditions, the root canal correctly prepared and a filling inserted which seals every part of the canal to the foramen should remain in a healthy condition throughout life. It should be borne in mind that this is not a "dead" tooth, because it still receives nourishment from the periodontal membrane, although the pulp has been removed. It is mainly because the operation of removing the pulp and replacing it with a suitable filling has not been carried out in a surgically aseptic manner, befitting the importance of the operation, that so many abscesses develope.

Then, again, when the pulp has been infected before removal, it is natural to infer that the tooth structure is also infected, as the dentine which encases the pulp is one mass of minute tubuli filled with an organic material.

Various methods have been advocated for sterilizing the tooth structure after the removal of an infected pulp, but the success of any of them is only in proportion to their penetration of the tooth structure. None so far has been shown capable of completely sterilizing the dentine *in situ*. To quote Prinz: "An incipiently infected root canal cannot be sterilized permanently by the antiseptic methods of treatment now in vogue. To completely sterilize an infected tooth root—basing our conception upon our present knowledge of antiseptic action—implies removal of the tooth bodily and thoroughly boiling it."

At the most partial sterilization of the canal to a very slight depth takes place, but infection lies just beyond this line of demarkation. Test cases have been taken under various methods of treatment which show negative results to scrapings taken from within the canal for various periods after the institution of the treatment. But when the tooth has been extracted and ground up, virulent cultures were invariably obtained, showing that by any methods advocated the tooth remained more or less septic. This point should be borne in mind. Prinz holds that the great majority of reinfections may be explained upon the basis that the infective organisms have remained undisturbed within the body of the tooth structure and have escaped destruction during the alleged process of sterilization.

Arthur D. Black states that the percentage of abscesses for all root fillings was 45; for good root filling 9; for poor root filling 63. To Black it seems that no better argument could be found to induce dentists to be more painstaking in their root filling technique, for here is the opportunity to reduce the total of alveolar abscesses to about one-fifth of the present number.

This examination by Black shows that for every 100 teeth which undergo the operation of root filling, abscesses develope in 45. This certainly is startling if we are to consider that the chances when a root is filled are equal whether there will be abscess formation or not. But his other figures which show that in 63% of roots imperfectly filled abscesses arise, must impress everyone that there is no room in dentistry for poor root fillings. His remaining figures show that after apparently good root fillings abscesses develope in 9%. This is probably accounted for by the fact that, although they appear to be perfectly filled, strict aseptic principles were not rigidly carried out. A consideration of these figures would lead to the conclusion that this method certainly does not come under the heading of preventive measures. Re-

sults like these figures imply have caused a wave of intense feeling to spread through the dental profession; some dentists have stated that, provided a pulp has to be removed or a root filled, the tooth had better be extracted, as the chances of it doing more harm than good are too great. I think the better attitude to take up would be to improve the methods of root filling and thereby gain at least 91% of successes.

The next question to be dealt with is whether it is advisable to retain or extract a tooth with an abscess on it. There is much diversity of opinion still on this subject, some holding that the patient should not be permitted to take the risks consequent on retaining a tooth with an abscess on it, others holding the opinion that an abscess can be successfully treated and the tooth retained in a useful and harmless condition. There are various methods of treating a dental abscess with the object of retaining the tooth. One of the first rules of surgery applies here, *i.e.*, establish efficient drainage. The drainage may be by way of the interior of the tooth itself (the pulp canal) or through a fistula, either existing or made for the purpose.

When the dentist considers that it is sufficiently drained, he usually attempts to sterilize the tooth and the abscess cavity by means of drugs, but, as I pointed out earlier in this paper, it is impossible to sterilize a tooth completely *in situ*, therefore his efforts are only partly successful. He usually succeeds in making the tooth comfortable and useful, but undoubtedly the infected area is only lying dormant ready to spring into activity whenever the patient's vitality is at all lowered. It is only right to point out to the patient that an attempt is being made to retain the tooth in as useful a condition as possible, but that at any time he may have to lose it; he may then take the risks with his eyes open.

When an abscess developes on a tooth, that portion of the root situated in the abscess area is bathed in pus, is denuded of its periosteum and consequently may be considered as necrosed, the surface begins to be absorbed, leaving a very rough and uneven portion projecting. Even when the pus has been drained away and the area washed by suitable antiseptics, this necrosed portion of the root still remains as a foreign and highly infected body. With the object of removing this portion of the root after the rest of the tooth has been treated, the operation of resecting the apex has been introduced. Under as aseptic conditions as possible, the gums overlying the affected root are anæsthetized by any of the several methods now in vogue and the gum opened and laid back, the outer plate of bone covering the root removed, with the periosteum previously peeled off, the necrosed portion of root usually about 1.5 mm. in length resected, the abscess wall curetted, then washed, etc., the final treatment varying from nothing at all to repeated packings every 24 hours until the cavity closes. This is, in my opinion, the most satisfactory treatment, but it must be borne in mind that the root is still infected and therefore its days are numbered. It is only advisable to perform this operation on the anterior or single-rooted teeth, as the risks of serious injury are too great for the dentist to attempt it on any of the multi-rooted teeth with rare exceptions. If only one root of a multi-rooted tooth is infected and the remaining root or roots are sufficient to retain and maintain the tooth in position and good condition, then the whole infected root may be resected and extracted, leaving the tooth supported by the other healthy roots. As a general rule it may be stated that any of the posterior teeth developing an abscess should be extracted, as it is practically impossible to treat them successfully; with regard to the anterior teeth, it is a case of "circumstances altering cases." When the rest of the teeth are in a bad condition and have to be extracted, then there is no need to attempt to retain it, or when, owing to the number, position and condition of the remaining teeth being unsatisfactory, extraction is advisable. In fact, it is usually advisable to extract it. But sometimes it occurs in the mouth of a person when the loss of a front tooth would occasion considerable distress and inconvenience. An attempt to retain the tooth under as tolerant conditions as possible would then be justified. A dentist hesitates before removing a tooth, especially a front one, when the patient still retains a full normal set, or when the removal of a tooth necessitates the wearing of a plate. These are all circumstances which influence the dentist and patient in taking chances. But when the patient is suffering from a disease which can have its origin from a dental abscess and which the physician or surgeon is confident is a probable cause of the trouble, then no consideration whatever should influence the dentist to leave the tooth in the patient's mouth.

Diagnosis.

Diagnosis of a dental abscess when a fistula exists or when excessive swelling is present, is an easy matter. It is in the case of the so-called blind abscess that a careful diagnosis has to be made. It is here that X-rays have played such an important part in dental diagnostic work. The doctor suspects the teeth after eliminating all other foci of infection and sends the patient to the dentist to be examined by X-rays. When it is a case of chronic alveolar abscess, the abscess area is radiolucent and shows up in the negative as a black spot on the root, but often in acute abscesses there is not sufficient rarefaction to cause this radiolucence; hence the negative result is not always conclusive. Again, what apparently appears to be an abscess on a tooth is sometimes a natural cavity thrown into the negative resembling a radiolucent area. Therefore, great care and experience is necessary in taking and reading X-ray pictures of the teeth. The experience gained by the earlier operators in X-ray work has been taken advantage of by the manufacturers of X-ray apparatus and at the present time special machines for doing purely dental X-rays are being supplied to dentists in thousands. To a certain extent they are still looked on as a luxury by dentists, but before very many years have passed they will be looked on as a necessity, just as the electric dental engine is now. When the skiagram fails to show an area upon the suspected tooth, others means of diagnosing are at the dentist's disposal. He may test the tooth for vitality by the electric current. If it is unresponsivle, he may then

open up the tooth and see the state of the interior. If the root is filled and he still suspects the tooth, he may remove the filling and attempt to obtain a culture from the apical area just beyond the root.

All crowned teeth should be suspected, even if they do not show any radiolucent areas in the negative. Dr. A. Corton, of Trenton, New Jersay State Insane Hospital, has given up examining crowned teeth or bridges by X-rays, as after taking over one thousand he had not found a percentage large enough to justify the cost of films. He orders all crowned teeth to be removed.

I have been asked to say something on the subject of attention to children's teeth.

Nature supplies the children with a deciduous set of teeth to be used and retained until the permanent ones replace them. It is the dentist's duty to assist Nature in an attempt to retain these teeth in as healthy and useful condition as possible. The mother should instruct the children to cleanse their teeth regularly and when decay occurs or before, if the mothers are wise, they should be brought to the dentist and have any decay removed and suitable fillings inserted. Abscesses form in association with deciduous teeth more readily than in association with the permanent ones, hence it is imperative that all cavities should receive early attention and the exposure of the pulp should be prevented.

Dental work for children is certainly not looked forward to with any pleasure by the average dentist, partly because the children have not sufficient intelligence to value the work being done for them, partly because the child is very often spoiled and partly because the dentist has not acquired the knack of handling children properly. Certainly in most cases the dentist is not able to do dental work of the highest order. His main desire should be to keep the child comfortable and free from pain and abscess formation until he is able to do work of a more lasting nature.

When an abscess does develope (for it is generally this state of affairs when the dentist first sees the child), it is again a matter of circumstances altering cases. Very often the child is suffering intense pain; therefore the only humanitarian thing to do is to extract the tooth. But sometimes a fistula has developed and the tooth does not trouble the patient. In this case the view is held by many that it is unnecessary to extract the tooth, provided the mother keeps the discharge wiped away. The object in retaining such teeth is to secure a space for the succeeding permanent tooth. If the tooth were extracted, the space would close up, owing to the increase in size and number of the permanent teeth and consequently the successor to the extracted tooth would take up an incorrect position in the arch. It is rather a doubtful procedure. Many dentists extract the deciduous teeth when abscesses appear and consider the health of the patient of more importance than the regularity of the permanent teeth. Various writers state that children are not so liable to metastatic infection from abscesses around the teeth as adults are and consequently the matter should not be viewed with such alarm.

I should like to emphasize what apparently seems a little understood dental fact. Many mothers are totally unaware that their children have a permanent tooth at 6 years of age. I know that a good many doctors find a great difficulty in remembering the dates of eruption of the teeth; I am therefore seizing the opportunity to remind you that the average child erupts the first permanent molar at from 5½ to 6 years of age and that this tooth comes in while all the first set are still in position and does not replace any of them, but comes in immediately behind the first set. We dentists are weary of the sight of mothers bringing in their children to have this tooth extracted, thinking all the time it was a temporary tooth. The doctors have greater opportunity of seeing the parents and children about this age in their homes than the dentist has, because it is often too late when he sees them. It would be a blessing to everyone concerned if the doctors would point out this fact.

SOME COMMON AFFECTIONS OF THE EAR, NOSE AND THROAT.[1]

By T. L. Anderson, O.B.E., M.D. (Melb.),
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The object of my paper is to bring forward for discussion a few of the points to be noted in connexion with some of the common affections of the ear, nose and throat met with in general practice.

In examination it is essential to have a frontal mirror and a good light—a frosted lamp with a lens is very desirable.

In using cocaine it is well to remember that children are very susceptible and must be carefully watched. Solutions should be freshly prepared. Solutions will keep if a small quantity of salicylic acid be added.

The patient should never swallow any solution, especially if a cocaine spray be used.

Hypertrophy of the Tonsil.

Hypertrophied tonsils and adenoids are very frequently met with in practice and because of their great importance, especially in childhood, will be considered first. The tonsil at birth and often in infancy projects very little beyond the surface of the tonsillar sinus. It probably has a tendency to continued growth apart from the excitation of cold catching in infancy. When removed in infancy it tends to recur like a lobster's claw. It has become a pathological entity when it obstrudes itself, if the child has reached four to six years of age. The tonsils are frequently portals of systemic and glandular infection. Their protective power against infection is limited and when this limit is passed, they are a positive source of danger.

Tubercular infection through the tonsil undoubtedly occurs and is probably much more frequently the case than is recognized. Various writers report that from 4% to 10% of tonsils removed show local tuberculous lesions. Indications for removal are: (1) recurrent attacks of inflammation, (2) enlarged tonsils interfering with swallowing, (3) dis-

[1] Read at a Meeting of the Western Australian Branch of the British Medical Association on August 18, 1920.

cases of the ear with deafness or discharge, (5) chronic cervical adenitis, (6) recurrent acute articular rheumatism following acute tonsillitis.

Operation.—Any operation, by whatever method, should aim at complete removal. Partial removal is liable to be followed by a return of symptoms later on. The anæsthetic may be local or general, the latter always in patients under 18 years of age.

General Anæsthetic.—Ether or chloroform or combination of both, ethyl chloride or somnoform. The two last mentioned have the advantage of the patient sitting up; a better light can be obtained and the patient recovers at once from the anæsthetic.

The position may be: (*i.*) lying on the side, (*ii.*) head hanging over the end of the table or (*iii.*) sitting up.

Method of Removal.—(1) Guillotine.—Sluder's method with Health's MacKenzie guillotine. In 75% to 80% the tonsils can be completely enucleated by this method. Three conditions are necessary: (*i.*) that the tonsil can be pushed through the fenestrum of the instrument; (*ii.*) that the bed of tonsil is freely movable, allowing the tonsil to be dislocated forward and upward a distance of between 2.5 and 4 cm.; (*iii.*) that the tonsil can be pulled forward against the alveolar eminence on the inner side of the lower jaw at the base of the last molar tooth.

(2) Dissection with knife or dissector.

Some writers state there is more cicatrization after dissection. The fundamental point is that the tonsil should be completely removed. Hæmorrhage after operation is sometimes serious and is always an anxiety. In adults morphine (0.01 grm.) and the application of the Watson-Williams hæmostat usually suffice. In children, if hæmorrhage be severe, firm sponge pressure in the space should be tried, or an attempt made to pick up the bleeding point. Failing this, the pillars should be stitched or clipped over a gauze pad for 24 hours. The child should always be carefully watched after operation. It should be kept lying down with the head raised and told to spit blood out and not to swallow it, so that an estimate of bleeding occurring can be made.

Adenoids.

The lymphoid structure of naso-pharynx becomes enlarged in response to bacterial stimulation much more readily in children than in adults. Hence adenoid hypertrophy frequently occurs after one of the exanthematous fevers. This occurs most frequently between the ages of six and fifteen years. The adenoid tissue does not always diminish or atrophy at puberty. Jonathan Wright says of the so-called adenoid facies: "The narrow, high palatal arch and the consequent narrow jaw and compressed nasal alæ are associated more frequently with tonsils and adenoids than the primitive type of jaw. Children have adenoids because their parents transmit to them the inheritance of narrow jaws; the parents do not have the narrow jaws as an acquired trait, but as an evolutionary one. This is the chief hereditary factor in the ætiology of the occurrence of adenoids and tonsils."

Environment, however, is the most important factor in the ætiology; insanitary surroundings, frequent cold catching, exanthematous fevers, climatic conditions all tend to produce naso-pharyngeal irritation and so lymphoid hypertrophy.

When to Operate.—In the absence of ear symptoms, in the absence of any marked deterioration of the general health attributable to the existence of hypertrophied tonsils and adenoids, in the absence of repeated serious attacks of coryza and sore throat, enlarged tonsils and adenoids should not be removed before the child is four years old. After that age it is often advisable to remove them for less pressing symptoms. Before four years it is more difficult completely to eradicate the growth and the condition is very apt to recur as lymphoid tissue in infancy tends to be reproduced when removed. Tonsils and adenoids should be removed for symptoms, not because they exist, and if possible not until the child is six to esven years old.

Adenoids by causing mouth breathing tend to produce tonsillar enlargement and dental caries and the latter tends to keep up the tonsillar irritation. It is almost a universal rule that when the tonsils are enlarged, adenoids are also present. The converse does not hold good, as only about 30% of patients with adenoids have tonsil hypertrophy. A fringe of adenoid tissue seen on the pharyngeal wall is absolutely diagnostic proof of adenoids. The aural complications are the most important. One writer reports in a series of 307 cases of adenoids, 255 patients had aural complications, which were suppurative in 144. It is considered that 80% to 85% of aural disease in childhood is due to the presence of adenoids.

Operation.—A general anæsthetic should always be given to children. I give ethyl chloride or somnoform in the sitting up position and use the La Force adenotome. The La Force instrument removes the greater part of the growth, which can be examined afterwards. It is necessary always to feel the naso-pharynx afterwards and to remove any piece left next to the septum or at the sides near the Eustachian tube with an ordinary curette. Tags hanging down should be looked for after the operation. The advantages of the La Force are: (*i.*) the mucous membrane cannot be injured, (*ii.*) the growth is brought out in the cage, (*iii.*) the whole growth as a rule is removed with one cut of the knife.

If a curette only is used, one with a cage or hooks to catch the growth should be used.

Complications.—Acute middle ear trouble is not infrequent after operation. The patient should be kept in bed at least 24 hours and the parent warned to notify any pain in the ears at once.

After operation it is important that the child should carry out systematic exercises in breathing through the nose; deep breathing through the nose night and morning, clearing the nose every morning by sneezing (produced by tickling the nose with a feather) or a little extract of soap inserted and emptying the nose into a basin and not using a handkerchief, will materially increase the good result of the operation. If there is no nasal obstruction and mouth breathing at night still persists, a chin strap may be worn.

Quinsy: Peritonsillitis.

Suppuration is much more frequent in the peritonsillar tissue than in the tonsil itself. The incision should not be in the tonsil but above and to outer

side of the tonsil, in a line extending outwards from the base of the uvula. Another method is to pull forward the upper part of the anterior pillar and to insert a right angle probe between it and the tonsil into the supratonsillar fossa; pus frequently is struck at once and escapes. Ethyl chloride may be given in the sitting up position, as there is very little risk of pus being drawn into the lungs. Without an anæsthetic it is difficult to get the mouth at all well opened.

Epistaxis.

In children epistaxis is frequently due to adenoids, in adults to deviation of septum, in the elderly to Bright's disease. The bleeding usually comes from the anterior end of the septum and the bleeding point can often be seen. It should be touched with the solid silver nitrate stick or gently with cautery. Perforation may be caused by too vigorous cauterization. It is seldom necessary to plug; if this be done, the plug should be removed within 24 hours.

Nasal Polypi.

Nasal polypi may be removed with the snare under local anæsthesia. In the majority of cases they are due to ethmoid disease and it is necessary to remove diseased cells to prevent recurrence. The patient should be warned of this.

Enlargement of Inferior Turbinate Bones.

There is a physiological turgescence of the mucous covering the inferior turbinate bones at puberty; removal of this tissue is not indicated. Deep linear cauterization by pinning down the mucous membrane will give great relief.

Where enlargement is due to hyperplasia, enough should be removed to give free air way. Too free removal should be guarded against, as there is much discomfort from too large an air way, leading to crusting in the nose, a dry pharynx and laryngeal irritation.

Chronic Rhinitis.

Exposure to cold and errors in clothing are frequent causes of acute attacks, which gradually lead to a chronic condition.

Disease of one or more sinuses or deviated septum is very frequently a cause. Constant douching of the nose should be avoided. It produces frequently a dry nose and more or less atrophy of the mucous membrane.

Foreign Bodies in the Nose.

Foreign bodies are frequently seen in the noses of children. A unilateral blood-stained discharge in a child is very suggestive of a foreign body. The foreign body can usually be removed with a long blunt hook or a thin blunt curette. A general anæsthetic should be given if the patient be a young child and if the foreign body be firmly imbedded in the tissues.

Affections of the Nasal Sinuses.

Chronic nasal suppuration is always due to sinus infection. Periodic frontal headache, frequently limited to one side, and relieved by a flow of mucus or muco-pus from the nose, is usually due to blocking of the frontal sinus outlet.

Chronic bronchitis or asthma may be due to suppuration in the antrum. Recently I have operated on two patients who have been quite relieved. An unpleasant discharge into the naso-pharynx—tasted or smelt by the patient—is suggestive of antral infection. The flow of a fœtid discharge from the nose or into the throat, especially in stooping, is occasionally noted by the patient. Persistent occipital pain or pain behind the eyes is suggestive of sphenoidal sinus infection.

Septum Affections.

Deviation of the septum is very common, but very frequently causes no symptoms. The fact that it is deviated does not indicate an operation. Pressure of the middle turbinate against the septum is a cause of severe headaches and occasionally of asthma.

Furuncle of External Auditory Canal.

This condition is very painful and is sometimes mistaken for acute middle ear trouble. The swelling can usually be seen. Lifting up lobe of ear is painful and pains on mastication will serve to distinguish it. Prompt incision is indicated and the furuncle gently curetted. I have seen a salivary fistula produced by too vigorous curetting. An anæsthetic should always be given, prefably nitrous oxide or ethyl chloride.

Acute Inflammation of the Middle Ear.

Acute inflammation of the middle ear usually sets in suddenly and is associated with a catarrhal condition of the nose or throat, acute or chronic. It may follow operation on the nose or throat or plugging of the nose.

Pain is usually very severe. There is always deafness in the affected ear. The membrane is reddened and frequently bulging. Pain may be relieved at once by chloroform vapour applied on wool in an egg-cup; Bonain's drops—equal parts of *ac. carbol, pur.*, menthol and cocaine—3 or 4 drops, also relieve the pain. Do not wait for the drum to rupture! It should be incised if there is any bulging and the pus evacuated by suction and politzerization. Early incision usually means complete cure. If the membrane is allowed to rupture the prognosis as regards complete restoration of hearing and cessation of discharge is not nearly so good.

Paracentesis can be done under local anæsthesia by Bonain's drops or under general anæsthesia with nitrous oxide or ethyl chloride. Acute pain in the ear may be due to carious teeth, or to the eruption of wisdom teeth. It is also frequently present in malignant disease of the throat and upper part of the larynx and œsophagus.

Chronic Otorrhœa.

Chronic discharge from the ear is always due to suppuration in the middle ear and the mastoid—chronic mastoiditis. It is largely due to neglect of the acute condition. Syringing as a routine is not advisable. Occasionally it may be employed to clear out débris. No great force may be used. Strong syringing may cause severe vertigo and vomiting. The canal should be gently cleaned out with wool on a match and lotions dropped in. Dry powders tend to cake and obstruct the exit of the discharge.

Progressive loss of hearing, giddiness and headaches are indications for more radical treatment. Any in-

dication of facial paralysis on the affected side is of grave importance. Mastoid pain may occur in acute or chronic ear affections and is always a serious symptom. It is due to blocking of discharge from occlusion of the Eustachian canal or blocking of the perforation in the drum membrane.

Rest in bed, two or three leeches over the mastoid, Bonain's drops, politzerization are measures which will frequently relieve the acute attack. The patient must be carefully watched and warned that operative measures may be necessary unless the condition clears up promptly.

Foreign Bodies in Ear.

Little or no harm results if a foreign be left alone until adequate steps to remove it can be taken. Syringing carefully done will remove 90%. If syringing fail, glue on end of a camel's hair brush may be tried. Blunt hook or fine forceps if previous measures fail are necessary. If all else fail, then a post-auricular incision must be made, the cartilaginous canal turned forward and the foreign body removed.

Reports of Cases.

ENCEPHALITIS LETHARGICA.

By G. C. Willcocks, M.C., O.B.E., M.B., M.R.C.P., *Sydney.*

In the following is a résumé of three cases treated at St. George's Hospital, London, in the autumn of 1919 by Dr. Arthur Latham.

Case I.—A boy of 12 years was admitted in a drowsy condition, too sleepy to give a satisfactory history. His parents stated he had been ill for one week with headache (not localized) and a tendency to fall asleep at all times. He had been awake for only one or two hours in the last 48 hours.

He had pain in the back of the neck and frowned if his head was moved. His bowels had not been opened for five days.

Examination revealed that the patient was a well-nourished boy with a flushed face, lying on his back in deep stupor, without stertor; he could only be aroused with difficulty; his eyes remained half closed while he answered questions.

He stated that his head ached and the back of his neck was painful when he moved. He had seen double three days ago, but now saw very indistinctly. He relapsed into sleep after these few statements. Being roused again he showed no irritation, moved his arms and legs slowly on request, displayed a thickly furred tongue and went to sleep again.

His pulse-rate was 90, his temperature was 37.2° C. and respiratory-rate 18. He was in no distress.

Nervous System.—The pupils were dilated, equal and sluggish. An internal squint of the right eye was present. There was right facial paresis. The knee jerks were depressed and difficult to obtain. The plantar response was indefinite and the abdominal reflexes were present.

Lumbar puncture was carried out on the seventh day of illness and 14 c.cm. of clear fluid under considerably increased pressure were drawn off. Pathological report: 50-70 lymphocytes per c.mm.; sugar and globulin normal.

The next day patient still slept heavily, but stated he felt better generally and had less headache.

The signs were unaltered, except that fine lateral nystagmus was observed.

Lumbar puncture was again performed on the following day and the cerebro-spinal fluid was found not to be under increased pressure; a few clear drops were allowed to escape.

Following this puncture the improvement was rapid; the squint and nystagmus were not observed next day; he became brighter, his headache disappeared and his tongue cleaned.

Examined on the seventh day after admission, he presented no abnormal physical signs, but still felt a little drowsy. He was discharged quite well within 17 days of admission.

Case II.—A boy, aged 14 years, was heavily asleep on admission, could be aroused, but was not able to follow questions. He was said to have been ill for five days with headache, drowsiness and constipation.

On admission the face was seen to be flushed and the patient stuporose. The pulse-rate was 88 and the temperature 37.5° C.. His hands were tremulous and the movements slow and stiff. The knee jerks were not obtained. There was a plantar flexor response. The abdominal reflex was present.

The pupils were equal, dilated and sluggish to light. The fundi were normal. The face was fixed and "starched" in appearance, simulating a double facial palsy.

Lumbar puncture was carried out and 15 c.cm. of clear fluid under markedly increased pressure were withdrawn. Lymphocytes, 2 per c.mm.; sugar and globulin not abnormal.

Next day the patient was delirious, with marked tremor of his hands and of his head when this was raised from the pillow. He also displayed quite marked irregular clonic movements of the hands, arms and face.

Lumbar puncture was repeated on the following day. The pressure was increased; 22.5 c.cm. were withdrawn. The fluid was clear and contained four lymphocytes per c.mm..

Improvement occurred following this puncture; towards the end of the following day the delirium ceased and he slept quietly, but still showed choreiform movements of his hands and face when roused. A day later he awoke, answered questions lucidly, complained of headache, sleepiness and indistinct vision. His pupils were dilated and sluggish and he had the "mask-like" face commonly seen in advanced *paralysis agitans*. His knee jerks were not obtained; the other reflexes were normal.

Lumbar puncture was not repeated. The patient gradually recovered over a period of three weeks. The headache and sleepiness were the first symptoms to disappear. In about ten days from admission he appeared normal in this respect. His pupils regained their mobility and his face resumed its normal aspect. In one month from date of admission he was discharged to a convalescent home apparently quite well.

Case III.—A married woman, of 28 years, was sent in with the diagnosis of "meningitis." It was said that she had been drowsy and had complained of headache for one week; she became much worse in the two days prior to admission, during which time she had been in bed. She had not vomited.

She was a well nourished woman; her face was flushed. She was very drowsy and was aroused with difficulty. She did not reply intelligently to questions. Her temperature was 38.3° C. and her pulse-rate 100. The pulse was full and bounding. The respiratory-rate was 20. The abdomen was full, but not tender. She resisted movement of her head and neck. Her pupils were equal and reacted to light and accommodation. Her knee jerks could be elicited.

At first this case was thought to be possibly an acute infection, with no present rash, there being no symptoms except general acute febrile symptoms.

Lumbar puncture was performed and a reddish fluid under pressure, which contained numerous red cells, was obtained; 22.5 c.cm. were withdrawn.

Next day the patient was still stuporose, but could be roused. There was double ptosis and lateral nystagmus; no other abnormal physical signs were detected.

The bowels were and had been costive for four days. The patient rapidly became comatose in the afternoon of the day following admission. A second lumbar puncture was performed and it was found that the cerebro-spinal fluid was under increased pressure and was still stained red with blood. The patient showed no improvement and died within 48 hours of admission.

Post Mortem Examination.—There were extensive hæmorrhages all over the surface of the brain and into *pia mater*. Other lesions were not marked in the gross specimen. I unfortunately did not see the microscopical appearances.

Discussion.

The symptoms in these three cases demonstrate the variability in the course of the disease and in the situation of the lesions.

In Case I. the brain stem appears to have suffered mainly; recovery was complete.

In Case II. the basal ganglia would appear to have been the situation of the lesions. The tremor, choreiform movements and mask-like face simulated the "*paralysis agitans*" type of *encephalitis lethargica* very closely.

The number of cases of this type in England is of interest in view of the recent findings in the brains of patients who have died from *paralysis agitans* (1). No *post mortem* examination had been made in any case of this kind (*i.e., encephalitis lethargica* showing symptoms of acute *paralysis agitans*) up to July this year at the Queen's Square Hospital in London. There were, however, several cases under observation, some of which showed the most extreme rigidity, marked tremor, "mask-like" face and the attitude so commonly seen in *paralysis agitans*. The festinant gait was more easily demonstrated in these cases than in most cases of *paralysis agitans*. The "abortive type" (2) of the disease may be not uncommon in Australia, as in England. It was quite common to see patients at the Queen's Square Hospital who volunteered the statement that they had double vision, extreme sleepiness, or confused vision some three weeks before; but had not been sufficiently ill to go to bed. Dr. Buzzard, who is most careful to avoid suggesting any symptom, thought that many of these patients had suffered with encephalitis of a mild type, leaving commonly, as a sequel, some ocular palsy, for which medical advice was sought.

References.

(1) A. S. MacNalty: *Lancet*, November 2, 1918.
(2) *Medical Annual*, 1920.

A good résumé of the literature is contained in *Medical Annual* of 1920.

Reviews.

MENTAL DEFICIENCY.

The third edition of Dr. Tredgold's book on "Mental Deficiency" is revised and brought thoroughly up to date.[1] The former editions of this work contained a very great deal of material that is of permanent value, based upon the author's personal investigations, extending over a period of many years. The new edition is a distinct improvement and of even greater value. Each section of the book is plainly the work of a master and contains abundant evidence of the author's skill and capacity for painstaking research.

Not the least important section is that dealing with the causation of amentia; the results of the author's investigations in this field are worthy of the closest study. He concludes that the prime origin of defect lies in a germinal impairment, the cause of which is to be found in the environment. Its effects are discussed in the account of mental defect from its sociological aspect and in the statements regarding crime and immorality among defectives, which should remove any existing doubt as to the necessity for suitable legislation to deal with the defective class.

The chapter on moral imbecility has been re-written and enlarged and the account of this condition, one presenting very real diagnostic difficulty, is an excellent example of the systematic and lucid manner in which the whole subject has been treated. Lack of moral sense and lack of wisdom, combined in some cases with abnormal instincts, are described as the essential characteristics of the moral imbecile, who is "by no means unintelligent in the ordinary sense"; these three characteristics are discussed in detail. A distinction is drawn between what is ordinarily understood as intellectual defect and the mental defect of the moral imbecile. This chapter is allotted its full share of the wealth of illustrative cases which accompany the descriptions of the various other forms in which defective mentality is manifested.

Mental tests are discussed in a practical way and great value is claimed for them, provided they be properly applied and rightly interpreted. Indeed, the author looks to them to improve our present imperfect knowledge of the defective mind. Limited space is devoted to the graduated serial tests which have come into such prominence in recent years. While the Binet tests are accorded full credit for great value, the author, in a reference to Goddard's revision, considers "the value of these tests in the diagnosis of amentia to have been very much exaggerated by some zealous persons."

The statements of one with such a wide clinical experience, who has given so much attention to his subject, will be considered with respect. The book is of interest particularly to members of the medical profession. It contains such a wealth of instructive material that it is commended also to all those who are interested in any way in mental defectives, especially to those concerned in the provision and administration of measures for their protection, control and training.

[1] Mental Deficiency (Amentia), by A. F. Tredgold, M.D., F.R.S.; 1920. London: Baillière, Tindall & Cox; Third Edition, revised and enlarged; Demy 8vo., pp. 525, illustrated. Price, 25s. net.

Naval and Military.

APPOINTMENTS.

The following appointments, etc., have been notified in the *Commonwealth of Australia Gazette*, No. 102, of November 18, 1920:

Permanent Naval Forces of the Commonwealth.

Sea-Going Forces.

Surgeon Lieutenant Ernest Sydney George Killen Vance, M.B., is permitted to accept, and retain for his personal use, fees paid to him by civilians at Crib Point and adjacent districts, for his services.

The following Officers are transferred to the Retired List: Surgeon Lieutenant-Commander Ernest Harris Beaman, Surgeon Lieutenant James Henry Sleeman, Surgeon Lieutenant Martin Moylan Lyons, and Surgeon Lieutenant Albert Wallace Weihen.

The following Officers are transferred to the Retired List and temporarily recalled for duty as Naval Medical Officer in the districts shown: Surgeon Commander Hugh Armstrong, District Naval Medical Officer, Hobart; and Surgeon Lieutenant William Henry Orchard, Assistant District Naval Medical Officer, Williamstown.

The following Retired Officers are temporarily recalled for duty as Naval Medical Officer in the districts shown: Surgeon Commander Bedlington Howel Morris, District Naval Medical Officer, Adelaide; Surgeon Commander Wilfred John Robert Nickson, V.D., Sub-District Naval Medical Officer, Newcastle; Surgeon Lieutenant-Commander William Arthur James, Assistant District Naval Medical Officer, Melbourne.

Australian Military Forces.

Second Military District.

To be Captains—
Thomas Richard Earls Davis, 1st July, 1920.
Richard Constantine Bassett, 1st July, 1920.

APPOINTMENTS, PROMOTIONS, ETC.

First Military District.

Australian Army Medical Corps—
Captain R. O. Douglas to be transferred from the Australian Army Medical Corps, 3rd Military District, 1st October, 1920.

Third Military District.

Australian Army Medical Corps—
Captain R. O. Douglas to be transferred to the Australian Medical Corps, 1st Military District, 1st October, 1920.

Australian Army Medical Corps Reserve—
The notification respecting the appointment of Harold Gengault Smith to be Honorary Captain, which appeared in Executive Minute, No. 639/1919, promulgated in *Commonwealth of Australia Gazette*, No. 110, dated 18th September, 1919, is cancelled.

Honorary Captain F. E. Hutchinson to be transferred to the Reserve of Officers, and to be Major, 1st October, 1920.

Reserve of Officers—

Honorary Major J. D. Norris to be transferred to the Australian Army Medical Corps, 6th Military District, and to be appointed Captain, 1st October, 1920.

Fourth Military District.

Reserve of Officers—

Honorary Captain G. Brown to be granted the temporary rank and pay of Major, whilst employed at Specialist at No. 7 Australian General Hospital, 15th September, 1920.

Sixth Military District.

Australian Army Medical Corps—

Honorary Major J. D. Norris, from the Reserve of Officers, 3rd Military District, to be Captain, 1st October, 1920.

PROMOTIONS, TRANSFERS, ETC.

Major-General Sir N. R. Howse, V.C., K.C.B., K.C.M.G., to be appointed from the Reserve of Officers to the Unattached List, 2nd Military District, 4th January, 1920.

Lieutenant-Colonel A. Sutton, C.B., C.M.G., V.D., Australian Army Medical Corps, to be Colonel, supernumerary to the Establishment of Colonels, and with pay and allowances of Lieutenant-Colonel, 30th November, 1915.

Lieutenant-Colonel (Honorary Colonel) A. H. Sturdee, C.M.G., V.D., Australian Army Medical Corps, to be Colonel, 22nd September, 1917.

Lieutenant-Colonel A. E. Shepherd, C.B.E., D.S.O., V.D., Australian Army Medical Corps, to be Colonel, supernumerary to the Establishment of Colonels, and with pay and allowances of Lieutenant-Colonel, 23rd September, 1917.

Lieutenant-Colonel G. W. Barber, C.B., C.M.G., D.S.O., Australian Army Medical Corps, to be Colonel, supernumerary to the Establishment of Colonels, and with pay and allowances of Lieutenant-Colonel, 6th January, 1920.

Lieutenant-Colonel R. J. Millard, C.M.G., C.B.E., Australian Army Medical Corps, to be Colonel, supernumerary to the Establishment of Colonels, and with pay and allowances of Lieutenant-Colonel, 7th January, 1920.

Major and Brevet Lieutenant-Colonel R. M. Downes, C.M.G., Australian Army Medical Corps, to be Colonel, supernumerary to the Establishment of Colonels, and with pay and allowances of Lieutenant-Colonel, 8th January, 1920.

Lieutenant-Colonel (Honorary Colonel) M. H. Downey, D.S.O., Australian Army Medical Corps, to be Colonel, supernumerary to the Establishment of Colonels, and with pay and allowances of Lieutenant-Colonel, 10th January, 1920.

Lieutenant-Colonel D. G. Croll, C.B.E., Australian Army Medical Corps, to be Colonel, supernumerary to the Establishment of Colonels, and with pay and allowances of Lieutenant-Colonel, 11th January, 1920.

Major A. H. Marks, C.B.E., D.S.O., Australian Army Medical Corps, to be Colonel, supernumerary to the Establishment of Colonels, and with pay and allowances of Lieutenant-Colonel, 23rd January, 1920.

Captain and Brevet-Major D. M. McWhae, C.M.G., C.B.E., Australian Army Medical Corps, to be Colonel, supernumerary to the Establishment of Colonels, and with pay and allowances of Lieutenant-Colonel, 24th January, 1920.

Major F. A. Maguire, D.S.O., Australian Army Medical Corps, to be Colonel, supernumerary to the Establishment of Colonels, and with pay and allowances of Lieutenant-Colonel, 26th January, 1920.

The following notices have appeared in the *Commonwealth of Australia Gazette*, No. 103, of November 25, 1920:

Australian Imperial Force.

Third Military District.

Major H. H. McWilliams, Australian Army Medical Corps, having resigned, his appointment in the Australian Imperial Force is terminated in England on 18th August, 1920, but to take effect from 10th October, 1920.

Australian Military Forces.

First Military District.

Reserve of Officers—

Honorary Captain W. H. Steel, 3rd Military District, is granted the temporary rank and pay of Major whilst employed at the Military Sanatorium, Stanthorpe, 9th September, 1920.

The temporary rank of Major granted to Honorary Captain H. T. Bourne is terminated, 5th October, 1920.

The temporary rank of Major granted to Honorary Captain J. B. Hogg is terminated, 22nd September, 1920.

Second Military District.

Australian Army Medical Corps—

Major J. C. Robertson to be transferred to the Reserve of Officers, 1st October, 1920.

Captain R. J. Silverton, from the Reserve of Officers, to be appointed Captain, 30th August, 1920.

Third Military District.

Unattached List—

Captain H. S. Jacobs to be transferred to the Australian Army Medical Corps, 1st November, 1920.

We learn from the October issue of the *St. Bartholomew's Hospital Journal* that Dr. J. L. Shellshear, D.S.O., has resigned his position as Senior Demonstrator of Anatomy in order to take another post "which has been offered to him under the Rockefeller benefaction to University College." It is gratifying to the Sydney University to read that Dr. Shellshear has proved an efficient and popular teacher.

The Advisory Committee of the Department of Public Instruction of Victoria dealing with the medical inspection in the State schools has been appointed for the period from November 1, 1920, to December 31, 1921. The members are Sir J. W. Barrett, K.C.M.G., Dr. H. D. Stephens (representing the Victorian Branch of the British Medical Association), Dr. Edith Helen Barrett (representing the Victorian Medical Women's Society), Dr. E. Robertson (Chairman of the Commission of Public Health) and Mr. Thomas Obbingson, a dental practitioner.

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The Medical Journal of Australia.

SATURDAY, DECEMBER 4, 1920.

The Medical Officers' Relief Fund.

In March of 1917 Dr. F. S. Hone proposed in a letter published in our columns that the medical profession throughout the Commonwealth should establish a fund for the benefit of the dependants of medical officers who fell in the war and for those who returned incapacitated from war service. The proposal did not meet with an immediate response. A few were seized with the need for such a fund and advocated it strongly. Repeated reference to the proposal was made in our columns and as time passed, it became increasingly popular. At length the idea of a medical relief fund assumed a definite shape and attracted the attention of every Branch of the British Medical Association in Australia. The Federal Committee addressed the Branches in March, 1918, with a request that they consider a scheme for raising a Federal fund for this purpose. In August of the same year the Federal Committee established the Medical Officers' Relief Fund (Federal) and instructed its Chairman to appoint the Trustees, who were to be nominated by the New South Wales Branch of the British Medical Association. The Federal Committee resolved that the fund should be established for the assistance of medical officers who had been disabled and of the dependants of those who had died and further that it should be used to issue loans, with or without interest, to medical men who on account of war service might require temporary financial assistance. The Trustees were duly nominated and appointed and in July, 1919, a circular letter was addressed to every registered medical practitioner in the Commonwealth, setting out the objects of the fund and inviting the recipients to contribute in the aggregate £50,000 or about £20 each. On August 16, 1919, that is two years and five months after Dr. Hone proposed the establishment of a fund, the first list was published in our columns. The amount acknowledged was £2,471. Week by week the lists were published and the Trustees were gratified at the prospect of receiving an amount approaching that sought. Then the contributions became fewer and smaller and in the early months of the present year it was apparent that the total amount to be collected would not exceed one quarter of the £50,000. A financial statement of the fund was presented by the Trustees to the Federal Committee in February, 1920, setting forth the fact that under £12,000 had been contributed. In this issue we publish a highly significant report of the Trustees and an abridged financial statement. A year ago it was recognized that the impression existed in many quarters that there was but small need for the fund, that it was the duty of the Repatriation Department or the Department to of Defence to provide returned medical men with sufficient means to re-establish themselves in practice and that the Federal Committee had made a mistake in instituting the fund. We are now in possession of the facts and are therefore in a position to reply to the objections raised by those who looked for information during the collection period and looked in vain.

The Medical Officers' Relief Fund was established primarily for the benefit of incapacitated men and of the dependants of those who had fallen. Fortunately the majority of those who died on active service, either had no one dependent on them or else left sufficient to provide for their dependants. Thanks to the relatively small fund, the pressing needs of the few left in straitened circumstances have been met. Had the fund been larger, more liberal aid might have been given. The Trustees recognize that in the course of a few years they will be privileged to defray the expenses of the education of the children of our dead colleagues in order that it may be completed as their brave fathers would have desired. It is again a fortunate circumstance that the number of medical men who have returned from active service wholly or partially incapacitated, is small. A few of these men have received assistance which was greatly needed and which was not forthcoming from the Federal authorities. We have the assurance of the Trustees that these men were in urgent need of pecuniary assistance. The fund was just large enough to enable the Trustees to extend real help. It must be remembered that the Departments of Defence and of Repatriation have not

rendered this fund unnecessary. That has been evident for a long time.

The third object of the fund is the assistance of returned medical practitioners who experience difficulty in re-establishing themselves in practice. It is unnecessary to reiterate in this place the facts concerning the attitude of the Department of Repatriation toward medical practitioners. This matter is well known to every reader of this *Journal*. The Trustees have been compelled to exercise caution in extending aid to these men, lest the means available would not suffice for all. Varying sums of money have been lent without security to enable these men to find their feet. The result has been extremely happy. In many cases a long period of struggle, with the risk of eventual failure resulting from an absence of means to meet current liabilities, has been obviated and some of the men are already well advanced toward their safe rehabilitation. The Fund has been invaluable to them.

We are informed that a sufficient sum is available for all the calls that have been made on it. It is gratifying that this is so, but there was undoubtedly a serious risk that more might have been required. The Medical Officers' Relief Fund has justified itself, notwithstanding the fears and doubts of those who refrained from dipping their hands in their pockets because full information was not available at an earlier stage.

BLOOD VOLUME.

The need for an accurate method of estimating the total amount of blood in the human body has long been recognized by all investigators. Up to the present time it must be admitted that none of the methods which have been introduced, can be regarded as entirely satisfactory. Difficulty arises because the blood is not a homogeneous fluid filling the vascular system, but is a suspension of particles in a fluid of complex and ever-changing nature. Moreover, the suspended particles are of different and constantly varying sizes and are unevenly distributed throughout the circulation. In a critical review of the methods commonly employed to estimate blood volume, Drs. Paul D. Lamson and Takeyoshi Nagayama[1] have endeavoured to point out the errors that are incidental to these methods and to make clear what the results obtained by the different procedures really mean.

The methods of estimating blood volume are classified as direct, indirect and approximation methods. Direct methods may aim at the measurement of the total blood contents *en masse*, the volume of its various components, or the total amount of some substance evenly distributed throughout the blood compared with the amount in a unit volume. It is obviously impossible to drain the vascular system completely and measure its contents, nor can the total volume of red cells be obtained in this manner. If some substance characteristic of blood or of one of its components were evenly distributed throughout the blood and such substance could be separated and measured, the blood volume might be calculated directly from the ratio of this substance in unit volume of blood to the amount in the whole body. No such substance is known. Hæmoglobin is the nearest approach to such a material, but is not evenly distributed throughout the red corpuscles, nor is it definitely known whether there is any extra-vascular hæmoglobin. Moreover, it is impossible to measure the volume of the vascular system by the injection of a substance, such as paste or red lead, since the system is not rigid.

Indirect methods aim at arriving at an estimation of the volume of the blood by the injection of a known substance which would become thoroughly mixed with the blood. The total blood volume could then be calculated from the ratio of substance found in a unit of blood withdrawn to the total amount injected. This principle forms the basis of many of the methods at present employed, including the carbon monoxide method, in which a known volume of the gas is added to the circulation, and the "vital-red" method introduced by Keith, Rowntree and Geraghty, in which a dye stuff soluble in blood plasma is injected. In these methods either the red cell volume is measured or the plasma volume. The fallacy of such procedures lies in the fact that the relation of corpuscles to plasma in the sample of blood withdrawn is not necessarily a true index of the corpuscle concentration of the entire blood.

That this error may be considerable is seen by comparing the volume found by the carbon monoxide method, which depends on the red cell volume as the basis of calculation, with the results of the vital red method, in which the circulating plasma volume is measured.

The results obtained by these two methods in many observations give an average blood volume corresponding to 5.5% and 8.8% of the body weight respectively. Various approximation methods have also been devised, none of which may be considered to give an accurate estimation of the true blood volume. From the practical point of view the vital red method appears to be the most accurate and readily applicable means which has up to the present time been devised. It is capable of measuring the circulating plasma volume with a relatively high degree of accuracy. Similar methods have been employed, such as that in which antitoxin is used, the results being based on biological determinations of this substance. Recent observations have indicated that blood volume bears a more direct relation to body surface than to body weight. It has been shown experimentally that the injection of epinephrin causes an increase in the red cell concentration of the blood with a decrease in plasma volume. In this condition an actual loss of fluid

[1] *Journal of Pharmacology and Experimental Therapeutics*, June, 1920.

from the blood into the lymphatics of the liver takes place. Estimations of blood volume alone have been found inadequate to differentiate between fluid loss and variations in blood distribution resulting from vaso-motor changes and circulatory disorders.

It must be concluded that experimental methods are at present incapable of accurate estimation of the total volume of blood in the human body. From consideration of measurements of the circulating plasma volume by the vital red method and the corpuscle volume estimated by the carbon monoxide method, it would appear that the true blood volume is somewhat greater than 7.4% of the body weight.

THE MILK PROBLEM.

From time to time the public suddenly becomes aware of some of the unnecessary risks it is running as a result of the incompatability of unrestricted trading and the maintenance of the public health. A short time ago the demands of the carters and the desires of the milk vendors to pass the increased cost on to the consumers led to the suggestion of a single daily delivery of unguaranteed milk in Brisbane. Public opinion and medical opinion forced the authorities to insist on two deliveries of milk. Nothing, however, was done to safeguard the consumer against the delivery of sour and contaminated milk. The milk supply of all our large cities is intolerably bad, but the public is always patient and foolish; protests are rarely made. The public of Melbourne has recently awakened to the fact that there is something intrinsically wrong with the milk that is dragged wearily a distance of less than 50 miles to the metropolis and that is spilled into jugs at the back door after a series of varied experiences. The daily newspapers have devoted columns to this highly important subject for several weeks. The new Health Commission, with all the provisions of a new, elaborate and theoretically efficient *Health Act*, has discussed the situation from many aspects; the Premier and his Government have been attacked by deputations of earnest and well informed people, including many expert on the subject of milk, and have been required to reply to questions in the House. In the meanwhile, the weather is getting hotter and the effect of one delivery a day of soiled milk is becoming more and more apparent.

The problem of a safe milk supply has been solved years ago. We have dealt with the matter on many occasions in these columns. Old arguments, apparently, seem to lose their impelling force. The dangerous expedient of invoking new, doubtfully valid, arguments is adopted; and the simple matter of a demand becomes changed into a controversy. We enter a strong protest against the use of the argument that a contaminated milk is primarily a danger to infants of tender age. Babies should be fed on human, not cows', milk. It should be an extremely rare exception that human milk is not available for a baby. The importance of a pure milk is very real. Children and adults need a potable milk, not an emulsion of bacteria and oil globules. Dirty milk means dirty butter, dirty cream, dirty ice-cream. All these articles are dangerous. In addition, they are all unsavoury. Milk cannot be delivered in a pure, sweet and wholesome condition unless the process of milking is conducted on hygienic principles, unless the transport in sterile containers at a low temperature is expeditiously carried out and unless the delivery is prompt, cleanly and frequent. It is untrue that a reasonable profit cannot be made when the milk is properly handled at every stage from the cow to the consumer. System is required and control. If the small vendor cannot overcome the difficulties, he will have to give way to larger undertakings, built up on modern and scientific methods.

BACTERIOLOGY OF EPIDEMIC ENCEPHALITIS.

Cultivation of a filterable organism from cases of epidemic encephalitis is reported by Drs. Leo Loewe and Israel Strauss.[1]

A brief review of the literature which has recently arisen in relation to the bacteriology of this disease, shows that a variety of organisms have been described in connexion with cases of encephalitis by various observers. It is claimed that the adoption of special cultural technique, including the use of the tissue ascitic fluid medium as developed by Noguchi for the cultivation of *Treponema pallidum* and employed by Flexner in growing the globoid bodies of poliomyelitis, has resulted in the isolation of a specific organism, by means of which the disease has been reproduced in monkeys and rabbits. The organism isolated resembles in morphology and cultural characteristics that found by Flexner and Noguchi in poliomyelitis. It differs in virulence, occurrence and in the ability to infect rabbits.

It is claimed that the organism has been cultivated from brain, naso-pharyngeal mucous membrane, naso-pharyngeal washings, spinal fluid and blood of patients suffering from the disease. The same organism has been recovered from the brain and naso-pharyngeal mucous membrane of animals inoculated with the virus and cultures, which have succumbed to the experimentally produced disease. Positive animal inoculations are stated to have been obtained with the eleventh generation of the organism.

Should these results receive confirmation, it would appear that the virus of epidemic encephalitis is a filter-passing organism resembling the causal organism of epidemic poliomyelitis, but differing from it in that rabbits are susceptible to the former virus, but unaffected by poliomyelitis, whereas monkeys are susceptible to poliomyelitis, but relatively refractory to encephalitis.

It is stated that spinal fluid from poliomyelitis is innocuous when injected into rabbits and monkeys, whereas spinal fluid from cases of encephalitis produces in both of these animals lesions typical of the disease.

We regret to announce the death of Dr. Joseph Aloysius Beattie, which took place on November 27, 1920, at Liverpool, New South Wales.

[1] *Journal of Infectious Diseases*, September, 1920.

Abstracts from Current Medical Literature.

DERMATOLOGY.

(176) Apparent Diphtheroid Infection of the Skin.

H. W. Barber gives an account of a cutaneous affection of an ulcerative character affecting a man aged 48 who had served in France as a sergeant-cook (*Proc. Royal Soc. Med.*, March, 1920). In February, 1918, a "boil" appeared on the dorsum of the left wrist. From this situation an eruption spread downwards to the back of the hand and upwards to the back of the forearm. The lesion healed and the scar showed keloid thickening. In June, 1918, a second lesion appeared on the right leg. This was treated by X-rays, which seemed to cause it to spread. In January, 1918, there was a large area of indolent ulceration on the lower half of the inner surface of the right calf. The ulceration gradually healed, but in April, 1919, the left leg became involved. In August, 1919, the lower part of the left leg and the left ankle were involved in an extensive ulceration. The spreading edge was raised, œdematous and bluish-red in colour. Within this was a yellow adherent slough, while the more central parts were red, raw and covered with granulations. There was no response to the Wassermann test, even after a provocative dose of salvarsan. This drug did not exert any beneficial influence on the ulceration. Bacteriological examination of the blood failed to reveal the cause of the condition. In October, 1919, F. A. Knott undertook a complete bacteriological examination of the lesion. Cultures were made from the serum or pus obtained with meticulous care from the various levels of the affected tissue. From the superficial layers no organisms were recovered. From the deep layers, however, a diphtheroid organism, distinguishable from both the Hoffmann and the xerosis bacilli, was isolated. This organism induced local suppuration in a guinea-pig, but no septicæmia. The patient's serum and the serum of inoculated guinea-pigs agglutinated the organism. The serum of normal persons or normal guinea-pigs did not produce any agglutination. The injection of anti-diphtheritic serum simultaneously with the organism in a guinea-pig prevented the formation of abscess. The patient was then treated with a vaccine of this diphtheroid organism and after two injections the ulceration healed with amazing rapidity. The author reports that subsequently fresh ulceration started on the inner and upper surface of the left calf.

(177) Erythème Induré Des Jeunes Filles.

George Pernet describes a case of *erythema induratum* in a girl aged 14 years who was employed at a tyre works and stood all day at her occupation (*Proc. Royal Soc. Med.*, March, 1920). The eruption was flatly nodular with a tendency to evalescence on the surface. It was best marked on the right calf. On the backs of some of the fingers there were typical follicils lesions. The girl suffered from chilblains and also from phlyctenular ulcers. The condition corresponded to that described by Bezin under the name *erythème induré des jeunes filles scrofuleuses*. The patient's mother had suffered from tuberculosis of the ankle and it was stated that a brother was under treatment in an army hospital for abdominal tuberculosis. Pernet treated her with cod liver oil and maltine and proposed to add to this chaulmoogra oil.

(178) Non-Opaque Foreign Bodies in the Bronchi.

So much dependence has been placed on the Röntgenological diagnosis of foreign bodies that when faced with the possibility of a non-opaque body being present in a bronchus, the radiologist is at a loss how to proceed. C. Jackson (*Amer. Journ. Röntgen.*, June, 1920) claims as a result of a large experience that non-opaque foreign bodies in the lungs can be localized with accuracy. The commonest foreign bodies met with are peanuts, coffee-beans, maize, etc., but it is often impossible to show such foreign bodies as composition buttons and celluloid. Peanuts are particularly irritating and cause œdematous and purulent inflammation throughout the lower air passages; other foreign bodies cause less severe reactions. A presumptive diagnosis of foreign body is made when there is evidence that a child had the object in the mouth, suddenly choked and later developed an "asthmoid wheeze," paroxysmal cough, dyspnœa and fever. Physical examination shows a fullness of the unobstructed side, with lessened expansion on the affected side and at times retraction of the intercostal spaces on the affected side; rhonchal fremitus on the free side is usual. The percussion note on the affected side is "muffled"; this is probably due to the retention of air on the affected side, but when the condition of "drowned lung" is reached, the percussion note is quite dull. He states that by careful examination it can be determined which lobe is obstructed. The radiographic appearances are the opposite to what would be expected. There is increased transparency on the affected side, depression of the diaphragm on the same side, with displacement of the heart to the opposite side. These appearances are those of an acute obstructive emphysema due to blockage of a large bronchus by a foreign body.

(179) Radium Treatment of Cancer of the Œsophagus.

The technique of radium treatment of cancer of the œsophagus is very difficult. R. Wallis Mills and John S. Kimbrough find the treatment under Röntgen ray control greatly facilitates the process (*Journ. Amer. Med. Assoc.*, June 5, 1920). The beneficial effect of radiation is due to its selective, retrogressive action on cancer cells and the dosage must not be great enough to be harmful to the normal cells. After the diagnosis has been made of the obstruction by the Röntgen method, the radium tube is introduced on a carrier and is passed downward under fluoroscopic control until it engages in the strictured portion of the canal. It has been found that a preliminary injection of morphine and atropine prevents excessive salivation and renders the œsophagus more tolerant. Fifty milligrammes of radium is used enclosed in German silver, 0.5 mm. in thickness and brass of similar thickness; the whole applicator is covered with thin rubber. The radium is left in position for six hours. It has been found that from one to seven applications are necessary. All cases in a series of eighteen treated showed improvement, the dysphagia especially being relieved. Ultimate cure is not hoped for, but the relief obtained justifies the employment of this method.

(180) The Radiography of Some Obscure Bone Lesions.

R. W. Lovett and S. B. Wolbach (*Surg., Gynec. and Obstet.*, August, 1920) have published a record of the results of five years' conjoint study of certain obscure bone lesions. Where doubt existed as to the nature of any lesion, the pathologist was present at an exploratory operation; an immediate microscopical examination was carried out and suitable operative procedure adopted. Three pathological conditions were met with: (*i.*) atrophy, (*ii.*) destruction, local or general, (*iii.*) regeneration. Tuberculosis is largely destructive and the process is more often general and accompanied by atrophy of the affected and contiguous bones and generally commences in the region of the epiphysis. Osteomyelitis is at first destructive, but later it is a formative process. Syphilis is generally a formative process and often there is marked condensation of cortical bone. Tuberculosis may simulate any type of pathological bone condition. It is often extremely difficult to distinguish from an osteomyelitis or syphilis. Diagnosis from X-ray studies alone is not always possible, and the clinical and pathological evidence must be taken into consideration in coming to a conclusion.

(181) The Use of Buried Emanation in the Treatment of Malignant Disease.

H. J. Janeway (*Amer. Journ. Röntg.*, July, 1920) claims that the advantages for the use of buried radium are the accuracy of the primary dosage, the economy of time and the ease with which residual and incompletely treated portions of the growth may be attacked. The volume of the tumour is the most important factor in determining the dosage; but the shape of the growth is also of importance. An appended table gives a list of dosages suitable for the treatment of tumours of various cubic capacity; the dosage varies from 5 to 25 millicuries for superficial growths and from 5 to 40 millicuries for the more solid forms of growth.

BIOLOGICAL CHEMISTRY.

(182) Energy Value of Fat and Carbo-hydrate.

A. Krogh and J. Lindhard have studied the relative value of fat and carbo-hydrate as sources of muscular energy (*Biochemical Journ.*, July, 1920). The commonly accepted view is that muscle is able to use indiscriminately, and with the same co-efficient of utilization, different sources of energy. According to this view, the muscular machine can transform a definite fraction of the energy liberated by the combustion of any available substance into mechanical work, provided the substances can be oxidized in the organism. This is not in agreement with results obtained from isolated muscles. The general plan of the research was as follows: A human subject should live for a certain number of days on a definite diet, containing a minimum of protein and a very decided preponderance of either fat or carbo-hydrate. In the morning, after a period of complete rest, he should work on a bicycle ergometer for a certain length of time and the rate at which work was performed should be kept constant throughout for the same subject. During the work a number of determinations of the respiratory exchange should be made. All the experiments agree in showing that work is more economically performed on carbo-hydrate than on fat. When the work was sufficiently severe, the subjects performed it with greater difficulty on fat than on carbo-hydrate and became much more tired. The net expenditure of energy (standard metabolism deducted) necessary to perform one calorie technical work on the ergometer varied between 5.5 and 4 calories. During one hour of work it generally rose slightly from fatigue. For the single subject and on a constant level of training the relation between the respiratory quotient and the net expenditure of energy per unit work can be expressed graphically as a straight line. In the three best series of experiments the net expenditure of energy per calorie technical work varied from 4.6 calories when fat alone was catabolized to about 4.1 calories when carbo-hydrate alone was catabolized. The waste of energy from fat is 0.5 calorie or 11% of the heat of combustion of the fat. It is suggested that during rest and during work the proportion of fat to carbo-hydrate catabolized is a function of the available supplies of these substances. Carbo-hydrate is formed from fat and provisionally stored when the respiratory quotient is below 0.8, while a corresponding transformation of carbo-hydrate to fat takes place when the quotient is above 0.9 It would appear that neither fats alone nor carbo-hydrates alone are suitable for the supply of the energy requirements of the body, but that the catabolic disintegration of either of these substances requires the presence and the simultaneous catabolism of the other. While it has long been concluded from the acidosis and excretion of keto substances in severe diabetes and during starvation that carbo-hydrates are necessary for the complete catabolism of fat, it is a new hypothesis that fats are likewise necessary for the catabolization of carbo-hydrates.

(183) Oxygen Deficiency and Acidosis.

H. W. Haggard and Yandell Henderson attack the current conceptions concerning the relations of oxygen deficiency to acidosis (*Journ. Biolog. Chemistry*, August, 1920). One of the ideas based on the physiology of today is that a deficiency of oxygen produces in the blood a slight, but in its effects highly potent, acidity. The hypothesis of asphyxial acidosis has seemed to fit in well with the regulation of respiration by the chemical condition of the blood; for if the hormone of breathing is the C_H of the blood, an increased production or delayed destruction of a strong organic acid would at first sight appear to afford the conditions for the increased volume of breathing caused by asphyxia and for the over-breathing and lowering of the alveolar CO_2 induced by intense muscular exertion. Haldane is the chief supporter of the idea that the production of lactic acid is the cause of hyperncea. This should cause a marked lowering of the blood alkali is measured by its CO_2 combining power. But even after 60 or 90 minutes of marked oxygen deficiency the blood alkali shows only a slight fall. When lactic acid is injected into the blood, it appears to be rapidly destroyed and the CO_2 combining power is little altered, in marked contrast to the results following the injection of hydrochloric acid. It is improbable that a condition of lactic acid acidosis ever occurs in life. An increase of lactates in the blood or urine is probably an indication, not of acidosis, but of a low ratio of H_2CO_3: $NaHCO_3$; that is, alkalosis. It is suggested that the stimulant produced under low oxygen tension be termed respiratory *x*. The only fact certainly demonstrable about it is that it is not a strong, fixed acid. It causes, not acidosis, but alkalosis and over-breathing. The process through which oxygen deficiency lowers the blood alkali is as follows: over-breathing blows off an excess of CO_2 (acapnia), leaving the CO_2 ratio; *i.e.*, the relation of H_2CO_3 to $NaHCO_3$ and therefore presumably the C_H of the blood, below normal. This alkalosis is then compensated by a disappearance of alkali from the blood. On restoration to normal oxygen tension the reverse process occurs, the breathing is relatively depressed, the CO_2 ratio and the C_H of the blood are raised above normal and this acidosis recalls alkali to the blood.

(184) Sugar Tolerance and Hyperthyreoidism.

E. R. Wilson has investigated the blood sugar tolerance as an aid in early diagnosis of hyperthyreoidism and as an index of the effects of X-ray therapy in hyperthyreoidism (*Journ. Laborat. and Clin. Medicine*, August, 1920). The test is carried out as follows: The patient, having fasted the night before, is weighed and a sample of blood taken for the determination of the initial blood sugar at 9 a.m.. The patient is then given 1.75 grammes per kilo. body weight of glucose dissolved in 250 to 350 c.cm. of distilled water. The blood sugar is determined at intervals thereafter and a curve produced showing the rise and fall of the sugar content of the blood. The urine is also examined for sugar. In a normal person the blood sugar after the administration of glucose rises rapidly, reaching its maximum in ½ to ¾ hour, descends rather rapidly, approaching the normal fasting level between 1½ and 2 hours. In cases of hyperthyreoidism the blood sugar rises gradually, reaching its maximum height in 1 to 1½ hours after the administration of glucose; it falls rapidly, but does not reach the fasting level, or just above it, until between 2½ to 3 hours after the glucose administration. The urine of all patients with hyperthyreoidism gave positive tests for glucose, usually most marked in the 1½ to 2 hour specimens after the administration of glucose. The blood sugar tolerance test is of distinct importance in the early diagnosis of hyperthyreoidism. Seemingly advanced cases of hyperthyreoidism will respond but moderately to X-ray therapy, as shown by this test. An abnormal blood sugar tolerance curve, when due to hyperthyreoidism, will tend to approach the normal under X-ray therapy, indicating that excessive toxic secretion is lessened.

(185) Synthesis of Cholesterol by Infants.

J. L. Gamble and K. D. Blackfan have investigated the possibility of the synthesis of cholesterol by infants (*Journ. Biolog. Chemistry*, July, 1920). Analysis of the non-saponifiable fraction of infants' stools confirms the observation that cholesterol is excreted in infants' stools without undergoing to an appreciable extent change to coprosterol. Making use of this fact, the authors determined the cholesterol intake and excretion of four infants over periods of three days. The subjects were gaining in weight and were receiving the usual amount of cholesterol in their food. In all the experimental periods a much larger excretion than intake was found, the quantity of cholesterol in the stools being 1.7 to 3.4 times that which was present in the food. This result is interpreted as indicating a synthesis of cholesterol within the organism. The subjects of these experiments were not in an altogether normal state of nutrition, as they were at the time convalescing from more or less serious nutritional disturbances. Two of them were, however, quite vigorous and healthy infants, 3 and 4 months old respectively. If cholesterol metabolism is entirely dependent on an intake of preformed cholesterol in the food, it is very difficult to understand how the subjects of these experiments managed to gain in weight and present no symptoms of disturbed nutritional processes while exhibiting a large negative cholesterol balance.

British Medical Association News.

SCIENTIFIC.

A meeting of the Queensland Branch was held in conjunction with a meeting of the Odontological Society of Queensland at the B.M.A. Room, Adelaide Street, Brisbane, on October 1, 1920, Sir David Hardie, the President, in the chair.

The President announced the death of Dr. F. H. Thornton, of Thargomindah. It was resolved that a letter of sympathy be sent to Mrs. Thornton.

Dr. E. S. Meyers showed a specimen of a double ovarian cyst and a cystic kidney.

Dr. A. C. F. Halford exhibited a skiagram of the spine of a girl revealing marked enlargement of the bodies of the dorsal vertebræ. Dr. Halford reported that there were practically no symptoms.

Dr. A. V. Meehan presented a child with congenital paralytic *talipes*.

Dr. W. A. Harrison presented samples of Huon oil made from Huon pine. He described the antiseptic properties of the oil.

Dr. A. R. Menzies (a member of the Odontological Society of Queensland) read a paper on "The Treatment of Dental Abscess" and illustrated his remarks with skiagrams. The text of the paper will be found on page 509.

Dr. J. H. S. Jackson congratulated Dr. Menzies on his paper. He regretted that he had not dealt with the anatomy and pathology of dental infection. He, the speaker, regarded the question of focal infection from a dental source as a difficult one. The medical profession was to blame for the unsatisfactory state of affairs. They had associated dental foci with systemic disease, but had failed with few exceptions to consolidate their knowledge by actual study of the foci. Many dental infections persisted for years without producing any apparent harm. Dr. Jackson dealt with the question of extraction of teeth for abscess formation as compared with dental treatment. He claimed that extraction did not remove the whole of the infected tissue at times. This occurred especially when the alveolus and the rest of the bony socket had been damaged by disease or when a brittle tooth had broken off, and the roots were left embedded. He claimed, however, that extraction permitted thorough drainage. It was therefore the only method to be adopted if the focus were associated with systemic disease.

He held that devitalized teeth, incompletely filled canals, encysted roots, impacted molars, crowns and bridge work were often overlooked by both medical and dental practitioners. These conditions often failed to induce general symptoms. He explained this absence of symptoms by assuming that a small number of bacteria or a limited amount of toxin escaped into the circulation at one time. This might protect the body against an invading organism. He had no hesitation in removing fillings, etc., in all cases in which there were general symptoms. He agreed with Dr. Menzies that dormant foci eventually awakened with renewed vigour.

Practically every type of dental disease had been shown at some time or another to have some bearing on organic disease. He had seen a psychosis cured by the extraction of 17 carious teeth thirteen years after the onset of symptoms. Arthritis, sciatica, lumbago and so forth had been relieved by the removal of teeth. In regard to skiagraphy in the diagnosis of dental abnormalities, he stated that there were many fallacies. Foramina had been mistaken for abscesses, while rarefaction at the apex, resulting from the treatment of root canals, had also been misinterpreted in this way. He maintained that infection at the apex of a tooth was not always manifested by abscess formation. Granuloma could not always be demonstrated in the skiagram. He agreed with Dr. Menzies that it was impossible to sterilize a tooth completely after the pulp had been involved. The pulp chamber did not contain the whole nutrient supply of the tooth. He described the minute tubules containing the vascular and lymphatic tissue pervading the body of teeth. The nerve canal was often occluded by deposits and disinfection could then not be carried out as far as the apex.

He could confirm Dr. Menzies's statement concerning the frequency of disease of the six year molars in children. He had been astonished to find the number of children up to 13 or 14 years of age who had lost all first permanent teeth. He held the opinion that preventive dentistry must supply the solution of the problem of dental sepsis. Notwithstanding the important research that had been carried out in connexion with the ætiology of caries, no definite cause had been discovered. Dr. Jackson referred to the claim made by an American who had devised a plan to improve the hygienic conditions of school children. A "dental hygienist," usually a woman, was appointed to remove calcareous deposits and bacterial plaques and to teach the children the proper use of the tooth brush and of the alkaline mouth wash. The system had been tried for five years and 20,000 children had been handled. It was claimed that the incidence of caries had been reduced by nearly 35%. He deprecated the delay in putting these measures into operation.

Dr. Walker (Odontological Society) expressed the opinion that the day was not far distant when dental practitioners would turn their attention to prophylactic work and gradually eliminate the devitalization of teeth, septic infection and its sequelæ. He felt sure that work of this kind would be of great assistance to the medical profession and would raise the status of the dental profession.

Mr. Parker (Odontological Society) expressed the view that dental caries had a serious effect on the general health. He thought that it was often overlooked by medical practitioners. He advocated systematic inspection of the teeth three or four times a year. Inspection of the teeth of school children was an excellent health measure, but it was insufficient, inasmuch as it did not include a dental inspection during the period of the eruption of the first permanent teeth.

Dr. J. V. Duhig stated that amœbæ were often a cause of peri-odontitis and necrosis of tissue. He was engaged with Dr. Menzies in a research into the bacteriology of the mouth. They had already found a very virulent hæmolytic streptococcus.

Mr. J. W. Ward, the President of the Odontological Society, gave a brief account of the methods of the Odontological Society in dealing with the dental inspection of school children. The dentists were endeavouring to educate the public concerning the importance of the care of the teeth.

Dr. A. C. F. Halford questioned the wisdom of laying down a course of treatment of caries of the teeth, without giving the least attention to the cause of the disorder. Everyone would admit that dental caries demanded the most earnest attention of preventive medicine, on account of the serious consequences. J. F. Colyer blamed modern methods of cooking and the consequent lack of mastication. Dr. Halford did not think that dental disease began so late in life. Some observers were inclined to attribute caries to saccharine fermentation. Soft starchy food had been observed to collect in the interstices of the teeth. He was not greatly influenced by this argument. Unless they studied further afield than the mouth and teeth, they would see the effect but not the cause. In support of the contention that the prime factor was the lack of mastication, Dr. Halford dealt with the results of this. He mentioned first the subnormal development of every muscle directly and indirectly concerned in mastication and of all the bones to which these muscles were attached. The result of the relative inactivity of these muscles and bones was chiefly felt by the alveolar ridges. Narrowing of the arch of the palate followed. Into the cramped spaces the poorly developed teeth ultimately erupted, where the stimuli which would make them strong and resistant to destructive influences were wanting. Work was their essential from infancy to the end of life. In the next place lack of mastication affected the salivary glands. These organs exhibited an extraordinary activity; their daily output in a normal masticating adult was measured in litres. To the limited growth of bone, muscle and teeth must be added minimal glandular secretion and consequently diminished endocrine activity. Further, there were other factors to be taken into consideration, such as the absence from the diet of the young child of the vitamine-containing foods which required chewing, abnormal tonsillar and adenoid reactions from secondary infective changes, vulnerability of those tissues which undergo atrophic degeneration

in the deficiency diseases, *inter alia*. Analogous conditions could be found in other parts of the body. In the reproductive system the artificial or accidental deprivation of function below the normal level gave rise to the smallest hurt. They could be sure that the right to work was essential not only for teeth but also for their whole bodies. This lesson must be learned by all concerned with the rearing of children, if their charges were to start life with teeth which did not merely like work and want to work, but delighted in the hardest task set to test their strength and stability.

Dr. E. S. Meyers advocated the institution of team work in hospitals, the teams to include dentists. He thought that the Odontological Society should press for better representation of the dentists on the staffs of hospitals.

Dr. A. Jefferis Turner cautioned members against blaming the teeth for everything. It was disappointing that both medical and dental practitioners were in the habit of treating symptoms and not causes. The prevention of caries was most important. It was a disease of civilization and was probably due to dietetic errors. He maintained that nothing had been brought forward in the course of the debate to throw any light on the cause and prevention of caries.

Dr. J. L. Selwood had noticed a definite improvement in school children after efficient dental treatment. He congratulated the departmental dental officers on the excellent work they were carrying out.

Dr. Martha Burns (Odontological Society) claimed that the modern dentist was never guilty of refusing to extract a tooth in the presence of an acute abscess. Caries was usually due to dirt and to a want of mastication.

Dr. D. Gifford Croll spoke of septicæmia arising as a result of dental abscess in children. He asked the opinion of the dentists concerning the advisability of extracting teeth during the acute stage of the condition. He had noticed a reluctance on the part of dentists to extract teeth in that condition.

Mr. Wood (Odontological Society) denied that dentists refused to extract teeth in the presence of acute suppuration. He always extracted these teeth. He insisted on a medical confirmation of his opinion that the operation was a safe one to be performed.

Dr. G. P. Dixon agreed with previous speakers who came to the conclusion that when an abscess formed in connexion with a tooth, the tooth should be extracted. Sterilization presented too great a difficulty to justify a retention of the tooth. He thought that the present fashion was to ascribe many diseases to dental foci. They should not forget that there were other foci of infection.

Dr. A. R. Menzies stated in reply that faulty mastication was undoubtedly the chief cause of decay of the teeth. The teeth were self-cleansing, if proper food were masticated. He was gratified to have received the support of the medical profession in his advocacy of immediate extraction in cases of acute abscesses. He considered that streptococci played the chief rôle in infections of the teeth. He did not consider the amœbæ very important.

A meeting of the Western Australian Branch was held at the Perth Public Hospital on August 18, 1920, Dr. A. T. White, C.M.G., V.D., the President in the chair.

Dr. R. S. McGregor exhibited a specimen of a heart affected with malignant endocarditis from a child aged ten years. There was a large aneurysm of the abdominal aorta. Dr. McGregor also exhibited a specimen of a mesenteric cyst.

Dr. T. L. Anderson, O.B.E., showed a specimen of a carcinomatous tumour arising from the posterior aspect of the cricoid cartilage in a female aged 46 years. The growth involved the junction of the pharynx and the œsophagus leaving the larynx intact.

Dr. H. H. Field-Martell referred to a note which had been published in *The Medical Journal of Australia* of July 31, 1920, page 103, by Dr. Charles Wassall, D.S.O.. Dr. Field-Martell stated that he was at Thursday Island at the time and had charge of the patient, a native who had been bitten by a shark. The photographs had been taken immediately after the occurrence and not during convalescence, as stated by Dr. Wassall. The treatment had consisted in a cauterization of the wound. In the first place the wound was opened and was filled with permanganate of potash, which was removed after four or five minutes. Tincture of iodine was then poured in. The wounds healed by first intention.

Dr. T. L. Anderson, O.B.E., read a paper on "Some Common Affections of the Ear, Nose and Throat" (see page 513).

On the motion of the President a vote of thanks was accorded to Dr. Anderson for his interesting paper.

MEDICO-POLITICAL.

A special general meeting of the Queensland Branch was held at the B.M.A. Rooms, Adelaide Street, Brisbane, on November 12, 1920, Dr. A. Graham Butler, D.S.O., the Vice-President, in the chair.

On the motion of Dr. A. Marks, C.B.E., D.S.O., seconded by Dr. A. Stewart. it was resolved:

> That the number of members of the Council be increased to six, instead of four, to include the two Federal delegates, *ex officio*.

Dr. C. A. Thelander inquired what the procedure would be should a delegate of the Branch on the Federal Committee be elected a member of the Council. It was decided that in such an event the candidate receiving the fifth highest number of votes should be elected.

Dr. D. A. Cameron moved, on behalf of the Council, a motion to the effect that the annual subscription to the Branch be increased to £5 5s. for metropolitan members and £4 15s. for country members. Members during the first five years after qualification should be required to pay £3 3s. The motion was seconded by Dr. T. H. R. Mathewson and was carried unanimously.

Dr. C. A. Thelander pointed out that as country members were unable to participate in the meetings, it was questionable whether they should be called upon to pay the same increase in subscription as the town members. He was informed that the increase was necessary to meet the expenses incurred in the extra work of organization of the Branch. All members benefited equally.

The Chairman read a letter from the Financial Secretary of the British Medical Association and referred to a report dealing with the increase of subscription to the British Medical Association which had appeared in the Supplement to the *British Medical Journal* of June 5, 1920. In these documents were set forth the salient points which had determined the Council and the Representative Body to increase the subscription for overseas branches from £1 5s. to £2 2s. per member.

Dr. J. Lockhart Gibson took charge of a motion contained in a letter from Dr. A. Morrison, as follows:

> That resident medical officers of public hospitals and of all Government institutions whose salaries do not exceed £600 per annum and who have no other source of income. should be exempt from any proposed increase.

The motion was seconded by Dr. R. H. La Barte Cummins.

Dr. A. Stewart and Dr. P. J. Kerwin disapproved of the proposed differentiation. Dr. C. A. Thelander moved as an amendment that the matter should be referred to the Council. The amendment was seconded by Dr. T. H. R. Mathewson and carried.

Dr. C. A. Thelander moved and Dr. J. G. Avery seconded a motion to delete the existing rules governing professional advertisement in the daily press and to substitute the following:

> No member shall be a party to the appearance of a notice of his life in the public press or insert any advertisement beyond an announcement of change of address or commencement or resumption of practice. Such announcement may contain only the name, address, telephone number, hours of consultation and specialty of advertiser.
>
> The whole advertisement shall be in the same type and no more spacing shall be given to it than is required for printing the same.
>
> Such advertisements shall only be inserted in the newspapers published at the place of practice and for not more than six consecutive insertions.

The motion was put to the meeting and carried without dissent.

The undermentioned have been elected as members of the Victorian Branch:—

Coller Dinwoodie, Esq., M.B., Ch.B. (Melb.), 1917, Kyneton.

James Amess Troup, Esq., M.B., B.S. (Melb.), 1920, North Melbourne.

Samuel Charles Fitzpatrick, Esq., M.B., Ch.B. (Melb.), 1915, Hamilton.

James Chambers Craig, M.B., Ch.B. (Melb.), 1910, Edenhope.

Miss Margaret Hodge Anderson, M.B., B.S. (Melb.), 1920, Queen Victoria Hospital, Melbourne.

Norman Roy Dale, Esq., M.B., B.S. (Melb.), 1920, Women's Hospital, Melbourne.

THE MEDICAL OFFICERS' RELIEF FUND.

The Trustees of the Medical Officers' Relief Fund (Federal) have handed us the following report and financial statement for publication.

Report of the Trustees.

Although it was originally thought that a sum of £50,000 would be required to meet the calls on this fund, yet it was quite impossible to estimate the actual requirements until the fund had been in existence for at least twelve months. With this experience the Trustees of the Medical Officers' Relief Fund (Federal) are able to say that the money in hand and promised, amounting to £12,082, will in all likelihood be sufficient to meet the requirements of those for whom the fund was created.

In the abstract of the Auditors' Reports no names could be mentioned, but it will be seen that a sum of £1,156 has been expended in gifts. What is not clearly shown is that over £3,000 has been advanced to returned medical officers who, by this means, have been helped to start or to buy a practice.

In the future at least eight children of deceased medical officers will have to be helped in obtaining a professional or commercial training.

The Trustees can say with emphasis that, judged on the basis of its first year's work, the fund has justified its existence.

(Signed) GEORGE ARMSTRONG,
W. H. CRAGO,
GORDON CRAIG.

FEDERAL COMMITTEE OF THE BRITISH MEDICAL ASSOCIATION OF AUSTRALIA.
MEDICAL OFFICERS' RELIEF FUND (FEDERAL).

Revenue Account for 12 Months Ended June 30, 1920.

To	£	s.	d.	£	s.	d.
Benefactions—						
Doctor's Widow	366	0	11			
Doctor's Aged Mother	350	0	0			
Doctor's Widow	60	0	0			
Doctor's Widow	50	0	0			
Doctor's Widow	50	0	0			
Doctor's Sister	30	0	0			
Disabled Doctor	250	0	0			
				1,156	0	11
„ Expenses—						
Printing, Stationery, Postages, Clerical Assistance, etc. (New South Wales	57	11	4			
Legal Expenses—						
Deed of Trust	11	10	0			
Sundry Expenses—						
Victoria	12	0	10			
Queensland	10	5	4			
Western Australia	3	12	6			
				95	0	0
„ Balance to Accumulated Revenue Account				8,963	5	5
				£10,214	6	4

By	£	s.	d.	£	s.	d.
Donations Received—						
New South Wales—						
Cash	4,000	19	0			
Securities	530	0	0			
				4,530	19	0
Victoria—						
Cash	1,975	18	0			
Securities	150	0	0			
				2,125	18	8
Queensland—						
Cash	1,880	1	4			
Securities	130	0	0			
				2,010	1	4
South Australia—						
Cash	873	8	4			
Securities	30	0	0			
				903	8	4
Western Australia—						
Cash				333	0	4
Tasmania—						
Cash	169	6	0			
Securities	10	0	0			
				179	6	0
				10,082	17	4
„ Interest on Investments and Loans				131	9	0
				£10,214	6	4

Abstract of Report by L. S. Drummond & Company, Incorporated Accountants.

Correspondence.

INJECTIONS OF ETHER IN PERTUSSIS.

Sir: In the *Journal* of November 13 is a note on the use of injections of ether in whooping cough.

The results I have obtained are nearly all the author of the note claims out of eleven children and two adults. I have one report only of no change. One mother took the trouble to time the coughing fits; she reported that the interval had lengthened from 20 minutes at mid-day, immediately after the injection, to over an hour by bed time.

In those children in whom the whoop is not at once abolished, the paroxysms of coughing are greatly shortened; 30 seconds is a long one, and, as a rule, there is only one whoop.

The pain of the injection is severe, but of short duration, less than 2 minutes.

Yours, etc.,
F. H. COX.

Helensburgh,
November 25, 1920.

AURICULAR FIBRILLATION.

Sir: In Dr. Macdonald Gill's reply to the discussion on his paper at the meeting of the New South Wales Branch of the British Medical Association in Sydney on September 24, as published in your journal of November 20, he states that Mackenzie took eighteen years to accept Lewis's proof of the nature of auricular fibrillation.

In view of this astounding statement, I would direct your readers' attention to the following facts and quotations:

Dr. Lewis published the preliminary communication concerning his work in the *British Medical Journal*, 1909, II., p. 1528 (November 27, 1909), *i.e.*, less than eleven years before Dr. Gill's remarks were made.

Lewis's full paper was published in *Heart*, I., 4, p. 306 (March 30, 1910).

Mackenzie's "Schorstein Lectures" at the London Hospital, in October, 1911 (*Brit. Med. Journ.*, October 14 and 21, 1911), were on auricular fibrillation.

I quote from a lecture delivered by Dr. Lewis at University College Hospital on "The Evidences of Auricular Fibrillation Treated Historically" and published in the *British Medical Journal* of January 13, 1912: "My conviction on the subject dates from the experiment performed on this animal on November 11, 1909. . . . Having sufficient data, I visited Dr. Mackenzie, for it was imperative that if the new view were to gather force, I should win his assent. . . . I placed them (the curves from this animal) before him without comment and he stated his belief, as I had hoped, that they were from a patient with 'nodal rhythm.' . . . It was in this manner that the auricular fibrillation theory won Dr. Mackenzie's support—support so generously given and so valuable, for it was withdrawn from the rival hypothesis, 'nodal rhythm.'"

Mackenzie states in the Schorstein Lectures above mentioned (page 871): "Lewis carried out a long series of observations on auricular fibrillation in the human subject and in animals, with the result that we now know that the vast majority of cases which I had described as nodal rhythm are due to auricular fibrillation."

Mackenzie also states in "Diseases of the Heart" (Third Edition, 1913, page 216): "When Lewis placed these facts before me, I had no hesitation in abandoning my views and accepting the fact that these cases owed their abnormal action to auricular fibrillation."

I would submit, Sir, that these quotations effectually disprove Dr. Gill's statement, which could not have been made in good faith by anyone with even an elementary knowledge of modern cardiac literature.

Yours, etc.,

H. HUME TURNBULL.

85 Spring Street, Melbourne,
November 25, 1920.

COMMONWEALTH SERUM LABORATORIES' VACCINES.

Sir: Having seen the Commonwealth Serum Institute's products largely advertised in your *Journal* and owing to the exorbitant prices now charged for English and American serums and vaccines, I decided to give the local product a trial. I then ordered a phial of mixed gonococcal vaccine, 500 million gonococci to 1 c.c. (as per leaflet), from a wholesale firm in Sydney from whom I had obtained the leaflet quoting the various preparations put up by the Commonwealth Institute. After a lapse of four days (November 19) I received a package of vaccine mixed gonococcal containing 50 million gonococci to 1 c.c. and stamped on the outside was "Not to be used after November 20, 1920." Surely the Commonwealth Institute can do better than this, for I was expected to use 10 c.c. vaccine in two days. There might be some excuse for American or English firms supplying products nearly out of date, but when using a local manufacture one expects an article quite fresh. If this is a sample of the treatment meted out to other practitioners it does not augur well for the future success of the Commonwealth Government's *protégé*. I might add the price was not much below that of the imported article.

Yours, etc.,

"G.P."

November 26, 1920.

ANÆSTHETICS ADMINISTERED BY DENTISTS.

Sir: With reference to the correspondence on Dr. Ziele's categorical statement that "no death has ever occurred in New South Wales in the use by dentists of ethyl chloride" and my contradiction thereof, it is now admitted in your issue of to-day's date that a case occurred, but the point is raised, implicitly, that the gentleman in question should not have been described by me as a dentist, because he was not registered in New South Wales. Dr. Ziele employed Messrs. Sly & Russell to find out details from the Department of Justice and he puts in a letter from them, which concludes as follows: "The case stated by Dr. Corlette is not, therefore, a case of administration of an anæsthetic by a registered dentist. If Dr. Corlette had pursued his inquiries further, he would have ascertained this fact." Let me now proceed to prick this iridescent six-and-eightpenny bubble blown for him by Messrs. Sly & Russell. I had noticed that the dentist's name was not given in the verdict nor elsewhere at the Coroner's office and I did "pursue my inquiries further." I did not employ the machinery of a firm of solicitors; I adopted an extremely simple and short method and its instant success makes me wonder again what sort of research had been made by Dr. Ziele in the first instance, before making his very positive statement. To be brief, I did what one might well have supposed that a dentist would have done first of all when making any enquiry. I turned up the files of the *Commonwealth Dental Review*. In Vol. II., page 107, February 10, 1905, I discovered a full report of the case, occupying nearly two pages; and if Dr. Ziele and Messrs. Sly & Russell "had pursued their inquiries further they would have ascertained this fact," namely, that it is described in capital letters, reaching across the page, as a "DEATH AT THE OFFICE OF A SYDNEY DENTIST." I then "pursued my inquiries further" still and I can tell Dr. Ziele that in the succeeding numbers I could find no record of any objection raised to the Journal's description of the gentleman in question, Mr. Edgar Byrnes, as a dentist. But if Dr. Ziele and Messrs. Sly & Russell want now to argue the point, let them make their quarrel with the Editor of the dentists' own journal. I propose, therefore, to allow them to fight it out between them. The description given at the time was, of course, given without the present bias of controversy and point-taking.

I turn now to another matter. Your readers may be interested to know that in the last number of the *Commonwealth Dental Review* several pages are devoted to me in a leading article—not complimentary, of course, though very wide of the mark. The Editor indulges, amongst other things, in some laborious sarcasm at my remark that I remembered the "scare it caused." Very well. His very own journal concludes its report by saying that: "This case created considerable interest—a number of dentists being present."

The number of the *Review* containing the report we have been discussing is quite interesting on the subject of anæsthetics and might appropriately have been described as an "ethyl chloride number." Not only does it report the Sydney case, but on pages 119 and 120 it gives another equally full report of an inquest on a death under ethyl chloride administered by a Mr. Aplin, a "duly qualified and registered dentist," at Petone, New Zealand. This case occurred on December 15, 1904. Then there are some editorial comments and warnings on anæsthetics, wherein these cases are referred to, and which displays a very marked lack of enthusiasm for ethyl chloride in dental practice. The "scare" which I mentioned therefore duly registered a contemporary mark in the editorial columns of the *Review* and there it remains as evidence.

While it may be quite justifiable to take reasonable risks, no one wants to see regrettable incidents occur from contempt of danger. It does not do to minimize in any way the very certain fact that it is much easier to kill with ethyl chloride than with nitrous oxide—and even that has a death-rate, as is shown by a case reported in another back number of the *Review*. If some day again a dentist happens on a calamity, he will not feel very grateful if he can say: "Why were not both sides of the question put before me more carefully?" When human life—not mere comfort—is at stake, it is surely proper to insist on extra care being taken in statements that may sway judgement.

Yours, etc.,

C. E. CORLETTE

Sydney, November 27, 1920.

Books Received.

PUBLICATIONS OF THE UNIVERSITY OF MANCHESTER: MEDICAL SERIES, No. XIII.: FEEBLEMINDEDNESS IN CHILDREN OF SCHOOL AGE, by C. Paget Lapage, M.D., M.R.C.P., with an Appendix on Treatment and Training, by Mary Dendy, M.A.; Second Edition; 1920. London, New York and Bombay: Longmans, Green & Co.; Crown 8vo., pp. 309, illustrated by 18 plates.

INJURIES OF THE PERIPHERAL NERVES, by Henry S. Souttar, C.B.E., F.R.C.S., Ch.M., and Edward W. Twining, M.R.C.S., L.R.C.P.; 1920. Bristol: John Wright & Sons, Ltd.; London: Simpkin, Marshall, Hamilton, Kent & Co., Ltd.; Royal 8vo., pp. 152, illustrated by 30 figures. Price, 18s. net.

ANIMAL EXPERIMENTS AND SURGERY: Hunterian Lectures Delivered at the Royal College of Surgeons of England on February 13, 16 and 18, 1920, by Walter G. Spencer, M.S., F.R.C.S.; 1920. London: University of London Press, Ltd.; Crown 8vo., pp. 179.

SURGICAL NURSING AND THE PRINCIPLES OF SURGERY FOR NURSES, by Russell Howard, C.B.E., M.S., F.R.C.S.; 1920. London: Edward Arnold; Crown 8vo., pp. 320. Price, 7s. 6d. net.

TRANSACTIONS OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA, Third Series, Volume the Fortieth, Edited by Walter G. Elmer, M.D.; 1918. Philadelphia.

Medical Appointments.

It has already been announced that Dr. Harvey Sutton, O.B.E. (B.M.A.), has been appointed, for a probationary period, Principal Medical Officer to the Department of Education of New South Wales. The appointment has now been confirmed.

Dr. H. T. Bourne (B.M.A.) has been appointed Public Vaccinator at Belgrave and Dr. E. R. Cordner (B.M.A.) at Diamond Creek, Victoria.

Dr. R. S. Godsall (B.M.A.) has been appointed Honorary Surgeon for the Ear, Nose and Throat and Dr. C. Norman Paul (B.M.A.) Honorary Dermatologist to the Lady Edeline Hospital for Babies at Greycliffe, Vaucluse, New South Wales.

The appointment as Junior Resident Medical Officers at Perth Public Hospital of Dr. W. A. Collopy, Dr. L. S. Woods and Dr. L. G. Male is announced in the *Government Gazette of Western Australia*.

Dr. Newnham Davis has been appointed District Medical Officer and Public Vaccinator at Shark Bay, Western Australia.

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, locum tenentes sought, etc., see "Advertiser," page xxv.

Broken Hill Commission of Inquiry: Six Physicians.

Royal Alexandra Hospital for Children, Sydney: (*a*) Honorary Assistant Physician. (*b*) Honorary Assistant Radiographer.

Medical Appointments.

IMPORTANT NOTICE.

Medical practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429 Strand, London, W.C..

Branch.	APPOINTMENTS.
NEW SOUTH WALES. (Hon. Sec., 30-34 Elizabeth Street, Sydney.)	Australian Natives' Association. Ashfield and District Friendly Societies' Dispensary. Balmain United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Leichhardt and Petersham Dispensary. Manchester Unity Oddfellows' Medical Institute, Elizabeth Street, Sydney. Marrickville United Friendly Societies' Dispensary. North Sydney United Friendly Societies. People's Prudential Benefit Society. Phœnix Mutual Provident Society.
VICTORIA. (Hon Sec., Medical Society Hall, East Melbourne.)	All Institutes or Medical Dispensaries. Manchester Unity Independent Order of Oddfellows. Ancient Order of Foresters. Hibernian Australian Catholic Benefit Society. Grand United Order of Free Gardeners. Sons of Temperance. Order of St. Andrew. Australian Prudential Association Proprietary, Limited. Mutual National Provident Club. National Provident Association.
QUEENSLAND. (Hon. Sec., B.M.A. Building, Adelaide Street, Brisbane.)	Australian Natives' Association. Brisbane United Friendly Society Institute. Stannary Hills Hospital.
SOUTH AUSTRALIA. (Hon. Sec., 3 North Terrace, Adelaide.)	Contract Practice Appointments at Renmark. Contract Practice Appointments in South Australia.
WESTERN AUSTRALIA. (Hon. Sec., 6 Bank of New South Wales Chambers, St. George's Terrace, Perth.	All Contract Practice Appointments in Western Australia.
NEW ZEALAND: WELLINGTON DIVISION. (Hon. Sec., Wellington.)	Friendly Society Lodges, Wellington, New Zealand.

Diary for the Month.

Dec. 7.—N.S.W. Branch, B.M.A., Ethics Committee.
Dec. 9.—Q. Branch, B.M.A., Council.
Dec. 10.—Q. Branch, B.M.A., Annual General Meeting.
Dec. 10.—N.S.W. Branch, B.M.A..
Dec. 10.—S. Aust. Branch, B.M.A., Council.
Dec. 14.—Tas. Branch, B.M.A..
Dec. 14.—N.S.W. Branch, B.M.A.; Executive and Finance Committee.
Dec. 15.—W. Aust. Branch, B.M.A..
Dec. 16.—Vic. Branch, B.M.A., Council.
Dec. 16.—Western Suburbs Med. Assoc., Annual (N.S.W.).
Dec. 21.—N.S.W. Branch, B.M.A.; Medical Politics Committee; Organization and Science Committee.
Dec. 30.—S. Aust. Branch, B.M.A..
Dec. 30.—Q. Branch, B.M.A., Council.

EDITORIAL NOTICES.

Manuscripts forwarded to the office of this journal cannot under any circumstances be returned.

Original articles forwarded for publication are understood to be offered to *The Medical Journal of Australia* alone, unless the contrary be stated.

All communications should be addressed to "The Editor," *The Medical Journal of Australia*, B.M.A. Building, 30-34 Elizabeth Street, Sydney. (Telephone: B. 4635.)